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EXECUTIVE SUMMARY

The purpose of this study is to evaluate what, if any, demographic changes can be observed in communities located adjacent to large-scale mountaintop surface mining operations. The demographic evaluations presented herein for these communities were based on three decades of census data (i.e., the 1980, 1990, and 2000 decennial censuses) in order to assess the demographic trends that have occurred over time: "prior to the introduction of surface mining operations into the case study community (i.e., 1980)," "during mountaintop surface mining (i.e., 1990)," and "after mountaintop surface mining (i.e., 2000)," respectively.

Analysis of available U.S. Census data and personal accounts collected from residents in selected communities were used to identify socioeconomic shifts over a three decade period. Supplemental information was also collection to assist in the evaluation. The following are the selected case study areas.

- Hamilton District, community of Werth, Nicholas County, WV
- North Elkin District, community of Kyle, McDowell County, WV
- Hardee District, community of Naugatuck, Mingo County, WV
- Hardee District, community of Scarlet, Mingo County, WV
- Blackey Division, community of Carcassonne, Letcher County, KY
- District One, Wyoming County, WV as the Control Area.

Generally, the census data supports the personal accounts of social and economic shifts within the areas of study. Also, the high occurrence of similar experiences in four different communities adjacent to large-scale surface mining operations supports some correlation between the socioeconomic trends observed and the presence of surface mining.

Census data demographics were studied for three time periods: 1980 U.S. Census presenting data from 1970-1979 or the “pre-mining period”; 1990 U.S. Census presenting data from 1980 - 1989, or the “during-mining period”; and the 2000 U.S. Census presenting data from 1990 - 1999 or the “post-mining period”. Various social and economic demographics were analyzed, such as population, income, and employment. Hamilton District in Nicholas county was the only district that had an employment trend that would be expected; an increase for the during mining condition and a decrease for the after mining condition. Employment increased during mining in two of the four case study magisterial districts and decreased after mining in two of the four case study magisterial districts, but not the same two. The control district did not experience an increase in employment in the during mining condition but experienced a decrease in employment in the after mining condition. The number of persons working in their resident county increased in Hamilton district for the during mining condition, this was the only district where this occurred. Unemployment did not decrease in any of the case study areas for the during mining condition.

Per capita income increased during mining in only one of the case study magisterial districts. Per capita income decreased after mining in one of the case study magisterial districts and in the control district. This income increase during mining and decrease after mining was not in the same district.

Real growth in median household income decreased in double digits in all case study areas as compared to a four and a half increase nationally.

For most of the case study areas, the number of persons receiving public assistance did not decrease in the during mining condition. Public assistance decreased in one of the case study districts and in the control district in the during mining condition. The number of persons living in poverty did not decrease in the during mining condition in any of the case study districts or the control.

Educational attainment, persons receiving high school or college degrees, increased in the during mining and after mining conditions for all case study areas and the control area with one exception. High school diploma attainment did not increase in the Blackey Division in the during mining condition although college degree attainment increased.

The North Elkin District is the only case study area with a notable black/African American population. It does not appear that the economic conditions for residents of this district improved in the during mining condition. Large percentage point increases in poverty levels were experienced in McDowell County and the North Elkin district. Employment did not increase nor did income increase in this district during mining. One of the topics evaluated in this study is whether there are indications of greater relocations or displacement in non-white racial areas. A sample of property ownership data from the North Elkin District did not display a pattern of large-scale purchase of properties by extraction or land holding companies. However, a sample of property ownership data from Superior Bottom another racially integrated community shows a 52 percent shift from private ownership to land holding company ownership.

Population decreased in all of the case study areas during mining and after mining. The number of students enrolled in public school districts decreased in all of the case study areas including the control area. The senior age group is comprising an increasing percentage of the total population within each of the study areas. Population, gender and age group trends indicate a less stable and increasingly elderly population.

These trends were apparent in the personal accounts of the residents. In each of the communities for which interviews have been collected, residents cited similar economic, physical and social impacts related to surface mining. When asked about benefits from the presence of surface mining, the only benefit consistently mentioned was jobs. The creation and retention of, equitable jobs was the most important economic factor tying the communities to the surface mining industry. Each of the families interviewed was either supported by the mining industry at one point or had an immediate family member who was. The overall decline in employment and specifically the decline in mining related employment in the study areas highlights the importance of local job opportunities.

Discussion of quality of life impacts within interviews centered around physical changes to the community and individual properties and social shifts, such as changes in population and personal relationships. Some physical changes were mentioned by residents of all communities such as, occurrences of disruptive dust, deteriorated ground water and changed wildlife habitat associated with the presence of surface mining. A few residents cited positive changes but most cited negative

changes.

> ...[the mountaintops] basically, for a period of time, become grasslands. Which for the all the vegetation that comes is good for the animals and the birds and environment… for them to prosper. I think this "Keep West Virginia Green"; the coal miners did not fall short in returning their areas to green."
> (resident of Werth, WV)

> "I am talking about rock, slate, goobs- probably a little coal - anything that they, dirt, anything that they would dig up on top of the mountain, when it rained it came down...It filled up the creeks. It filled up the creek beds and the creek would be wandering around and basically make into a swamp." (resident of Werth, WV)

> "I'm not against mining whatsoever, it's just that those of us that feel the effects of the damages and things like that. You know, they need to take care of us. Do something to prevent further damage, to keep us safe..." (Past Resident of Scarlet, Mingo County, WV)

While these physical impacts were not universally reported by every resident, they were consistently reported across communities and they contributed to some residents' decisions to leave their communities.

Residents from each of the communities, described close-knit and intimate social structures, often based around one or two extended families. The residents reported that the predominate change to social community was the loss of population. With the notable exception of one community, this population loss was directly attributed by residents to the presence of surface mining. In addition, property ownership records support this finding in three communities in which coal and land holding companies have purchased large percentages of land in the community. Each of these three communities had distinct individual experiences surrounding these significant population shifts; however, one common theme which emerged was the negative impacts population shifts of this scale can have on close-knit community structures. Few of these residents felt that their community was likely to recover and rebuild the same type of social networks and relationships that they once had.

I. INTRODUCTION

This study endeavors to evaluate and describe the socioeconomic changes to adjacent communities, families and individuals from the presence of large-scale surface mining within or adjacent to a community. A review of the "pre-mining", "during-mining" and "post-mining" socioeconomic conditions is evaluated.

The methodology section defines how mining conditions were determined and describes the method and criteria for case study selection. The methodology for the census data evaluation, collection of community interviews and supplemental data collection are also described in section two.

The selected case study areas and communities are defined and described in section three. Photographs of the case study areas are presented in an attachment to this report. The results of the census data evaluation are presented in section four.

Interviews with current and previous property owners and their family members were conducted. These interviews allowed individuals to express their personal and family experiences related to the presence of large-scale surface mining in their communities over time. These interviews are summarized within section five. The interviews are fully transcribed and included as an attachment to this report. The purpose of this effort is to supplement existing data within the EIS, and to provide a first-hand description of community life adjacent to large-scale surface mining. It is recognized that this is a limited sample, and therefore any conclusions drawn must take the sample size into consideration. The focus of the community narrative portion of the report is to present common themes and points of difference rather than analyze each interview in detail.

The results of the property ownership evaluation are presented in section six. The results of the school enrollment data evaluation are presented in section seven.

A review of other available studies and reports concerning the socioeconomic impacts on communities, families and individuals was conducted to aid in understanding the socioeconomic trends over time and the themes presented in the individual interviews. These studies and reports include social analysis of family and community structures in rural Appalachia, discussions of socioeconomic impacts related to large-scale community change and other sources of discussion on community impacts from surface mining. A summary of the findings of data collection efforts and the review of other relevant sources is presented in section eight. Conclusions of the demographic evaluation are presented in section nine.

II. METHODOLOGY

The purpose of this study is to evaluate what, if any, demographic changes can be observed in communities located adjacent to large-scale mountaintop surface mining operations. The demographic evaluations presented herein for these communities were based on three decades of census data (i.e., the 1980, 1990, and 2000 decennial censuses) in order to assess the demographic trends that have occurred over time: "prior to the introduction of surface mining operations into the case study community (i.e., 1980)," "during mountaintop surface mining (i.e., 1990)," and "after mountaintop surface mining (i.e., 2000)," respectively.

A. CASE STUDY AREA SELECTION CRITERIA

1. Case Study Areas

In order to study demographic changes that can be associated with the introduction of surface mountaintop mining operations, a search for six case study areas was conducted based upon specific selection criteria. Case study areas were required to lie within the project study areas of West Virginia, Kentucky and/or Virginia.

One of the case study area was selected as a control area. The control area is defined as an area which is similar in demographics, geography and economic resources but within which very little or no significant surface mining has taken place within the time period identified in the study. The control study area provides a baseline for comparison of demographic changes identified in the remaining case study areas.

The intent of the selection criteria is to identify case study areas which best fit the timing of mining (prior to surface mining - 1970 to 1980, during surface mining - 1980 to 1990, and after surface mining - 1990 -2000) and to eliminate potential case study areas whose demographic components were likely shifted by other factors. These criteria were evaluated:

- Availability of census data for demographics of interest (i.e., population, education levels, income, unemployment levels)

- Consistent size and orientation of the census county subdivisions. For example, the 1980, 1990 and 2000 data need to be reflective of the same geographic area.

- Timing of Mining. The case studies should be representative of areas for which large-scale surface mining did not occur in the vicinity until the 1980s and ceased to occur in the 1990s.

- Level of underground mining. Timing of underground mining, closure of underground mines. The case studies should be areas for which deep mine closures are not prevalent in the “during mining” period.

The following factors were also used to screen out potential case study areas. These factors were

evaluated to assess the degree to which the demographic changes would most likely be attributed to other variables instead of the introduction of large-scale surface mining into the area during the three-decade study period.

- Major Infrastructure Investment
  - Transportation/Access
  - Communication/Utilities
  - Educational System e.g. expanded university system

- Natural Disaster (e.g., flood)

- Major Economic Investment
  - Major Employer other than surface mining
  - Economic Resources or Market (e.g., tourism trade) other than surface mining

The above criteria were reviewed using available state mining permit data, U.S. Census Bureau data and mapping and historic mapping. For the purposes of this report "Major" is defined as beyond the scale of investment made in similar communities, and representing a change of considerable magnitude when compared to historical investment within the area.

2. Case Study Communities

From within the selected case study areas, communities were selected to collect first-hand accounts of community life adjacent to large-scale surface mining over time. The communities were selected based upon the following criteria in order of importance:

- Proximity to large-scale surface mining;
- Relative size and economic base of the community; and
- Timing of mining criteria established for case study area selection.

These criteria were established so that residents within selected communities would have experiences relevant to the study, the community would be minimally influenced by other economic factors, and where possible conclusions could be compared to the demographic analysis of the larger case study area.

B. CENSUS DATA DESCRIPTIVE STATISTICS

Census data were collected for the case study areas on the county subdivision level (magisterial district). Descriptive statistics were performed on select demographic parameters.

An historical trend analysis of the population was developed for the study period using the total population counts from the decennial censuses. This information is presented in tabular and graphical formats, and is compared to the population trends experienced at the county and state levels. The population characteristics include age, gender, race, density, family type and household

type.

Data were inventoried to characterize occupation types and industry sectors and includes an employment status comparison of males to females ages 16 and over. The major (i.e., 2-digit SIC or NAICS codes) industry sectors were used to determine changes over time in the total number of persons employed. Employment rate trends were inventoried and compared to regional trends, including the county and state.

Median income levels were compared for each period: before, during and after-mining and real income growth was evaluated. The U.S. Census provides a variety of income level parameters that can be used to measure the affluence of the local population. Specifically, median family income, median household income and per capita income levels were inventoried for each decennial census period and adjusted for inflation. The U.S. Bureau of Economic Analysis' Consumer Price Index (CPI) was used to adjust the various 1970, 1980 and 1990 income levels to the most current dollar value. The adjusted values demonstrate whether the case study areas experienced real growth in income.

The decennial census data also provides data on the number of persons receiving their income from social security, unemployment compensation, welfare or other public assistance. A historical analysis was performed to measure the change in the number of persons receiving income from these sources. This information provides insight on the trends associated with the case study area's retired population and the number of persons dependent on public assistance services.

The incomes of families and unrelated individuals are classified as being above or below poverty by comparing their total income to a cutoff or poverty threshold. The U.S. Census Bureau determines the poverty status for all persons in an area. The poverty status for each study area was inventoried and compared with the poverty status for the county and state. These values are presented in tabular and graphic formats.

C. COMMUNITY NARRATIVE INTERVIEWS

Personal accounts were collected through interviews to highlight the human aspects and quality of life impacts of large-scale mountaintop mining. A goal of the study was to collect five personal interviews per community.

The interviewed residents were selected at random according to the following procedure:

1. Parcel identification numbers for the selected community were identified based on county tax records.
2. A computer program written in the Microsoft Visual Basic programming language was used to randomly select 6 parcel numbers per case study area.
3. A review of tax records for the randomly selected parcel identification numbers was done to identify the current owner(s), and most recent private owner(s).
4. If the most recent date that the property was owned by a private individual(s) is earlier than

1980, then no interview was conducted for that parcel.

5. If individuals selected for interviews could not be located or did not wish to be interviewed, the process described above beginning with the selection of a randomly selected parcel number(s) was repeated until five interviews were conducted for each of the five case study areas.

Interviews were tape recorded and transcribed to ensure accuracy. The identities of all of the interviewed residents have been kept anonymous and no names or contact information are included in the demographic study report. Prior to the interview, the nature of the interview, the use of the information being collected and the scope of the interview were discussed with each resident.

A predetermined series of questions provided the framework for each interview to ensure a reasonable level of consistency. These questions are outlined below:

1. Individual/Family Context

Please tell me a little bit about yourself and your family.

What are your connections to this area? When did you/your family first arrive and from where?

2. Quality of Life

Did you observe or experience changes in quality of life related to community resources (schools, public services or natural resources) within the three time periods?

Was the community impacted by a change in population or shift in local demographics?

What is it about this particular community that you like? Has that changed?

Was there a change in your perspective regarding the future of the community? And did this relate to the presence of surface mining in any manner?

What have been the benefits from the presence of surface mining for your community?

4. Public Relations

What public information was available to you/the community regarding the introduction/activities of surface mining?

Were public relations between the community and the surface mining company continued beyond initial contact? In what circumstances?

5. **Decision to Leave** (for residents who left the community)

What were the primary factors in your decision to do so?

How did you feel about your decision to leave?

To what area did you move, and why?

Did you receive any assistance in relocating?

D. ADDITIONAL DATA

1. School Enrollment

School enrollment (grades K-12) data were gathered from local education entities (e.g., school districts, state education agencies). Enrollment data reflect community resource impacts and school closures as a function of displacement. Data were predominately collected at county and state-level school district and board of education offices. Enrollment data for each of the case study areas were collected for the periods before, during and after mining conditions where available. This information is presented in tabular and graphic formats to measure and illustrate changes in local school enrollments over time.

2. Property Transfer

Property ownership records were collected to document property ownership trends and population displacement. Data were collected from county tax assessors' offices for a series of randomly selected tax parcel numbers. The identified tax parcels were a representative group of properties from the selected area in which the community narratives were gathered, including those parcels owned by the interview residents. The record of last sale was identified for each property within the representative sample of no more than 25 properties. From card files, the following property transaction information was gathered: who sold the property, who purchased the property and when the purchase was made. Where available, the amount of purchase was also noted. As with the community narratives, the personal ownership information has been kept anonymous, and the parcel tax identification numbers are not included in the report. Individual owners are not named, but they are categorized as “individual owner,” “land holding company,” “mineral extraction company” or “other”. “Other” may include public agencies such as a municipality or school district, or private entities such as a church or fellowship hall. The real estate transfer data are presented in tabular and graphic formats to illustrate changes in property ownership patterns over time.

III. CASE STUDY AREA SELECTIONS

A. CASE STUDY AREAS AND COMMUNITIES

The U.S. Census Bureau County Subdivision was selected as the smallest geographic unit for the case study areas based upon availability of census data across a three-decade time period. Data for smaller geographic areas, such as the Census Tract, were not consistently available for 1980 census data within the project study area. A review of available mining permit and mapping data revealed that very few census county subdivisions sufficiently met the selection criteria. Based upon this review, a total of five county subdivisions were chosen which best fit the selection criteria, one of which was selected as the control area. This was one less case study area then the project goal of six. Within the five selected county subdivisions, a total of five case study communities were identified. Two of the case study communities were located in the same county subdivision and no case study community was selected within the county subdivision identified as the control area.

The following are the selected case study areas.

- Hamilton District, community of Werth, Nicholas County, WV
- North Elkin District, community of Kyle, McDowell County, WV
- Hardee District, communities of Naugatuck and Scarlet, Mingo County, WV
- Blackey Division, community of Carcassonne, Letcher County, KY
- District One, Wyoming County, WV as the Control Area

Table 1 illustrates the relationship between the case study areas (county subdivisions) and the case study communities. A brief description of each selected case study area and case study community in regards to the selection criteria is provided below.

1. Hamilton District, Nicholas County, WV

Within the Hamilton District portion of Nicholas County there are few significant areas of employment generation or large-scale investment. Summersville, the County seat of Nicholas County, lies to the south of this area and Interstate 79 lies to the north. The majority of surface mining (63 percent of permits) began in the 1980s and ended in the 1990s. An additional 23 percent of surface mining permits were issued during the 1970s and had either been completely released or had reached a level of reclamation by the 1990s. Underground mining activity through the three-decade period was minimal relative to other areas in the region, and underground mine closures were not significant during the "during-mining" period of the 1980s. U.S. Census data are available for the three-decade period for Hamilton District.

Community: Werth, WV

The community of Werth is within approximately two miles of a 100 + acre surface mine lying to the North and West. Mine permit information and mapping made available by the state of West Virginia website indicate that this site is currently being reclaimed to forest land, and fish and wildlife habitat. In addition to the above mentioned surface mine site, another surface mine which was completely bond released by the early 1990s lies along the North side of Route 55 approaching the community. The community of Werth itself has an estimated population of less than a few hundred people and only one other significant employer in the immediate area.

2. North Elkin District, McDowell County, WV

This portion of McDowell County has few significant employment centers. The largest employment center in McDowell County, Welch, is not included in the North Elkin District. There is no large-scale infrastructure, such as an Interstate highway, in this District. Of the total surface mining permits 39 percent fit exactly within the criteria established for timing of mining, and 65percent of all surface mining permits had reached at least some phase of release by the date of this report. Of the total 57 underground mining permits in the District, none of the permits ended in the 1980s. This total number of underground mining permits is within a similar range of underground mining activity in other selected case study areas. U.S. Census data were available for the three-decade period for North Elkin District.

Community: Kyle, WV

State permit data indicate a surface mine about 3/4 of a mile southwest of the community. While the permit for this 486 acre mine was revoked in 1993, the West Virginia Office of Surface Mining field office in Welch, WV confirms that prior to being revoked, the status of this mine was "Phase 3 - Released" indicating active mining in the 1980s. The community consists of less than 100 homes and a church along the highway, and down in a valley.

3. Hardee District, Mingo County, WV

Overall, Hardee District had fewer numbers of surface mining permits than other areas; however, of those permits just under half (42percent) fit the criteria for timing of mining. In addition, underground mining permits were minimal and activity on these permits is on-going, therefore, not impacting demographic shifts within the three-decade period. US Route 119 crosses a portion of the Hardee District; however, the largest employment center within the immediate region, Williamson, does not lie within the Hardee District. U.S. Census data were available for the three-decade period for Hardee District.

Community: Scarlet, WV

The community of Scarlet is located adjacent to four permits for surface mines which total more than 1000 acres, and list mountaintop removal, auger, contour and area mining. Each of these permits was first issued in the 1980s and are currently listed as in some phase of reclamation. The community of Scarlet is entirely residential and has an estimated population of less than 100.

Community: Naugatuck, WV

Within a few miles of Naugatuck to the northeast, there are several surface mining permits which total approximately 900 + acres. These sites list issue dates in the 1980s and had reached at least Phase 1 or 2 Release by the 1990s. The community of Naugatuck has a small commercial area and a population of a few hundred homes.

4. Blackey Division, Letcher County, KY

This portion of Letcher County has few significant employment centers and no large-scale infrastructure investments. Whitesburg, the Letcher County seat and the area's largest economic center, south of the Blackey District. Of the total surface mining permits 38percent fit exactly within the criteria established for timing of mining. Available data did not permit analysis of the number of underground permits which were completed in the 1980s; however, the total number of underground mining permits was within a similar range of underground mining activity in other selected case study areas. U.S. Census Bureau data are available for the three-decade period for Blackey District.

Community: Carcassonne, KY

Available Kentucky mining permit data indicate several surface mining permits immediately surrounding the community of Carcassone, all closed by the date of this report. Further visual and anecdotal evidence indicates that surface mining occurred in the 1980s and were reclaimed in the 1990s. The community of Carcassonne has an estimated population of less than 100 and no commercial areas.

5. Control Area - District One, Wyoming County, WV

Within this area of Wyoming County there are few surface mining permits, a total of eight permits within the three-decade time period. As with other areas in southwestern West Virginia, underground mining was on-going during this period and Wyoming County had a total of 47 underground mining permits which is in the middle of the range of underground mining activity for the selected case study areas. In addition, there are no significant economic centers or major infrastructure within the District One area. Wyoming County is similar to the selected case study areas in its population demographics and economic base. For example, the 1990 per capita income of Wyoming County is between that of McDowell and Nicholas Counties as shown in Table III.P.3 of the EIS. Therefore, District One fits within the criteria of a control in that the primary characteristic which differs between it and the selected case study areas is the presence of significant large-scale surface mining.

B. CASE STUDY COMMUNITIES

Each of the above selected communities met the criteria identified regarding presence of large-scale surface mining within or adjacent to the community and lie within an area also being evaluated as part of the demographic analysis presented in Section IV. While the overall county subdivision area demographic analysis focused on the pre, during and post-mining periods of 1970-1980, 1980-1990 and 1990-2000, the presence of surface mining adjacent to interview communities do not necessarily fit within these time frames. The community interviews are samples of personal and family experiences, therefore, the focus was the selection of communities where surface mining may have played a role in the socioeconomics of the community. The dates in which mining occurred was a

secondary concern to the adjacency and the completion of the full pre-mining to post-mining cycle. The extent to which surface mining may have played a role in the socioeconomics of the community was defined by proximity of surface mining to the community and scale of the surface mining.

The common theme between the communities is their proximity to large-scale surface mining. The majority of the communities are small, with a total population no larger than 500 families, with the exception of Naugatuck. Scarlet could be characterized as a more traditional hollow settlement, to some scale isolated and geographically located in a ravine between mountain hillsides. Werth, Kyle and Carcassonne are also traditional family settlements but were developed predominately along either bottom land or hillside land along a road corridor.

In addition to the five study communities, a small number of interviews were collected as supplemental accounts in Blair, WV and Superior Bottom, WV. A summary of these interviews are also presented. Both Blair, WV and Superior Bottom, WV are presented as additional examples of communities with large-scale surface mining immediately adjacent to the community; however, surface mining is on-going in these communities. Therefore, since Blair and Superior Bottom are currently still within a during-mining phase, these areas do not fit the selection criteria.

IV. CENSUS DATA DESCRIPTIVE STATISTICS

The purpose of this section is to use census data to evaluate what, if any, demographic changes can be observed in the selected census county subdivisions. Census data for the demographic evaluations were collected for three distinct time periods (i.e., the 1980, 1990, and 2000 decennial censuses) to assess trends that have occurred over time: "prior to the introduction of surface mining operations into the case study community (i.e., 1980)," "during mountaintop surface mining (i.e., 1990)," and "after mountaintop surface mining (i.e., 2000)," respectively. The case study areas and their respective census divisions for which the 1980, 1990, and 2000 census data were collected are shown in Table 1. Figures 1 through 5 illustrate the location of these case study communities in relation to the census divisions within which they are located.

The North Elkin Magisterial District, which is a county subdivision of McDowell County, West Virginia is presented in Table 1. Prior to 1990, the North Elkin District consisted of three individual county subdivisions—Adkin District, Elkhorn District, and the North Fork District. In addition, the North Elkin District boundary changed between the 1990 and 2000 Censuses. Specifically, a portion of the Browns Creek District (McDowell County, WV) was annexed to the North Elkin District. Figure 1 illustrates the boundary. While this annexation caused the North Elkin District's total land area to increase from 122.1 square miles to 130.3 square miles, it is perceived not to have produced any significant impacts on the outcome of this study.

Figure 2 depicts the Hardee Magisterial District, a county subdivision of Mingo County, West Virginia. Figure 3 depicts the Hamilton Magisterial District; a subdivision of Nicholas County, West Virginia. The communities of Naugatuck and Scarlet are located in the Hardee Magisterial District, while the community of Werth is located in the Hamilton Magisterial District, West Virginia.

The District 1 Magisterial District, located in Wyoming County, West Virginia, was selected as the control area for the descriptive statistics analysis. District 1 is an area having similar demographics, geography, and economic resources as the other case study area census divisions (i.e., North Elkin, Hardee, and Hamilton Districts, and Blackey Division), but has experienced little or no significant surface mining activity within the 1980, 1990, and 2000 time periods. The control area provides a baseline of demographic comparisons identified in the five case study communities. As illustrated in Figure 4, District 1 was (i.e., 1980 and 1990 Censuses) wholly comprised of the Barkers Ridge and Slab Fork Districts.

The following sections present the descriptive statistical analysis performed for the study area states, counties, and county subdivisions. The 1980 and 1990 census data presented herein for the North Elkin District and District 1 represent, where feasible, the total census enumerations for their respective historic subdivision boundaries (e.g., the 1980 census population counts for the Adkin, Elkin, and Northfork Districts were summed to represent the total population counts for the North Elkin District).

A. POPULATION CHARACTERISTICS

1. Total Population Growth Trends

Table 2 details the 1980, 1990, and 2000 total population enumerations and growth trends for the study area states, counties, and subdivisions. All of the case study areas experienced varying rates of population decline over the 1980 to 2000 census period.

Figures 6 and 7 illustrate the population trends experienced at the county and subdivision levels, respectively. McDowell County, from 1980 to 1990, experienced the largest percentage decrease (-29.4 percent) , followed by Wyoming (-19.5 percent), Letcher (-12.0 percent), Mingo (-9.6 percent), and Nicholas (-4.8 percent). Except for Mingo County, the population declines in the study area counties slowed during the 1990 to 2000 Census period. McDowell County, however, continued to experience the largest percentage decrease (-22.4 percent), followed by Mingo (-16.3 percent), Wyoming (-11.3 percent), Letcher (-6.4 percent) and Nicholas (-0.8 percent).

Most of the study area county subdivisions experienced somewhat similar population trends as their respective counties; whereby, the rate of population decline was lower during the 1990 to 2000 census period compared to the 1980 to 1990 census period. Exceptions, however, are noted for the Hardee and Hamilton Districts; whereby, their rates of population decline increased from -10.5 percent to -13.2 percent, and -1.0 percent to -4.7 percent, respectively.

Figure 8 provides a comparative illustration of the percentage change in population enumerated for each study area and their respective county and state. This figure depicts that the largest percentage decrease in population occurred during the 1980s for the majority of the study areas. Exceptions to this trend are noted for the Hardee and Hamilton Districts. On a county basis, the largest percentage decrease in population occurred during the 1980s for all counties except for Mingo county. West Virginia as a whole had a greater decrease in population during the 1980s, while

Kentucky as a whole had a greater decrease in population during the 1990s.

In general, the population decreases experienced by the study area counties and their respective subdivisions may, in part, be associated with their respective out-migration trends. For example, from 1990 to 1997 the net domestic migration values as enumerated by the Census Bureau for the study area state and counties (Figure 9) closely resemble the population trends presented in Table 2 during the 1990 to 2000 census period. Therefore, it is highly probable, that the large population decreases experienced by the study area jurisdictions during the 1980s may have, in part, been caused by an increase in their net out-migration patterns, in other words, people left the area.

2. Population Density

Table 3 provides a historic comparison of population densities (persons per square mile) for the study area states and counties, and their respective study area subdivisions. Except for Kentucky, all surveyed jurisdictions experienced an overall decrease in their respective population densities over the 1980 to 2000 Census period.

At the county level, the largest numeric decreases in population density values over the 1980 to 2000 Census period were experienced by McDowell (-42.2), Mingo (-21.4), Wyoming(-20.6), and Letcher (-16.0) Counties, while Nicholas County experienced only a slight decrease (-2.5). At the county subdivision level, the North Elkin District experienced the largest numeric (-44.1) decrease in population density value followed by the District 1 (-23.2), Hardee (-11.6), and Hamilton (-1.2) Districts. These trends are reflective of the population trends shown in Table 2.

3. Age Group Distribution

An examination of age structure is of interest in demographic analysis because human behavior is related to life cycles. For example, increases in the school-age population affect the demand for educational services

Persons 20 to 44 years (i.e., young adult age group) of age represent the group most eligible for marriage and most frequently engaged in new household formations. This is also the prime childbearing age group. Therefore, any decline or imbalance in the number of persons within this age category will directly impact the birth rate. Furthermore, this age group represents the basic segment of the population that comprises the local labor force and the group most frequently engaged in home buying or building activities.

The mature age group, is comprised of persons ranging from 45 to 64 years of age, and tends to be more settled and at the height of their earning power. Persons 65 years of age and older (i.e., senior age group) are generally characterized as having (1) a limited purchasing power, (2) an increased demand for health and public transit services, and (3) are increasingly dependent on fixed income sources, such as social security, pensions, and/or public assistance.

Age level data (i.e., absolute number of persons ages 0-85 and over) were collected from the 1980,

1990, and 2000 Censuses for the study area states, counties, and their respective subdivisions. These data were then categorized into the four age groups and subsequently calculated as percentage distributions to represent the population age composition for each census year. Figures 10 through 13 illustrate the age group trends by study areas during the 1980 to 2000 time period.

As illustrated in Figure 10, all study area jurisdictions experienced declines in their school age populations over the 1980 to 2000 Census periods. These trends are indicative of the population declines experienced over the 1980 to 2000 census periods.

Figure 11 demonstrates that all study area jurisdictions, except for District 1, experienced increases in their young adult populations during the 1980s, which may have resulted from the shift (i.e., aging) of the 1980 school age group into the young adult age group. Supporting this aging trend is the fact that from 1990 to 2000, all study area jurisdictions experienced a decrease in their young adult populations, which likely resulted from a combination of the population declines and aging trends.

Figure 12 clearly demonstrates that the mature age group was the fastest growing segment of each study area's population during the 1990 to 2000 period. In fact, McDowell County and the North Elkin District rebounded from their young adult population declines during the 1980s. These trends are, again, indicative of an aging population.

Figure 13, demonstrates that in all study areas, the senior age group is comprising an increasingly larger percentage of the total population.

4. Gender Composition

The distribution of males and females in an area directly impacts future family formation patterns and subsequent birth rates. Traditionally, a higher proportion of females is considered more favorable to maintain a stable population. Table 4 shows the male to female ratio trends (i.e., 1980, 1990, and 2000) for the study area states, counties, and subdivisions. Values greater than 1.0 indicate that males outnumber females.

Except for the Hamilton District, the majority of the study areas populations consisted of more females than males [Other exceptions are noted for the 1980 Census where the number of males exceeded the number of females in the Hardee District (1.01) and Letcher County (1.15)]. While the majority of the study area jurisdictions experienced population decreases, Figure 14 illustrates that the majority of the study area jurisdictions experienced a greater decrease in the number of males than females over the 1980 to 2000 period (Exceptions to this trend are noted for the Hamilton and District 1 subdivisions). The overall trends presented in Table 4 and Figure 14 indicate that the majority of the study area jurisdictions are achieving a favorable mix of males to females which, again, is vital to stabilizing the study areas' population declines.

5. Household Formation Trends

A household, according to the U.S. Census Bureau, consists of people who occupy a housing unit. A house, an apartment or other group of rooms, or a single room, is regarded as a housing unit when it is occupied or intended for occupancy as separate living quarters; that is, when the occupants do not live and eat with any other persons in the structure and there is direct access from the outside through a common hall. A household includes the related family members and all the unrelated people, if any, such as lodgers, foster children, wards, or employees who share a housing unit. A person living alone in a housing unit, or a group of unrelated people sharing a housing unit such as partners or roomers, is a also considered as a household. The count of households excludes group quarters.

The Census Bureau defines two major types of households: "family" and "non-family." A family is a group of two or more people (one of whom is the householder) related by birth, marriage, or adoption and residing together; all such people (including related subfamily members) are considered as members of one family. A non-family household consists of a householder living alone (a one-person household) or where the householder shares the home exclusively with people to whom he or she is not related.

Changes in the number and types of households depend on population growth, shifts in the age composition of the population, and the decisions individuals make about their living arrangements. Demographic trends in marriage, cohabitation, divorce, fertility, and mortality also influence family and household composition. Additionally, changes in norms, values, laws, the economy, and improvements in the health of the elderly over time can influence people's decisions about how they organize their lives. The effects of these trends and individual decisions produce aggregate societal changes in household and family composition.

Raw household data (i.e., total households, total family households, and total non-family households) were collected from the 1980, 1990, and 2000 Censuses for the study area states, counties, and respective subdivision areas. The total number of family and non-family households were then calculated as a percentage of the total number of households enumerated for each census period. These enumerations are shown in Tables 5 and 6.

Table 5 demonstrates the percent change in the number of total households for each study area jurisdiction during the 1980-1990 and 1990-2000 periods. During the 1980 to 1990 period, the North Elkin District experienced the largest percentage decrease (-24.0 percent) in the number of total households, followed by McDowell County (-19.6 percent), District 1 (-11.6 percent), Wyoming County (-8.1 percent), the Hardee District (-7.5 percent), Letcher County (-2.8 percent) and Mingo County (-0.6 percent). In contrast, the Hamilton District was the sole county subdivision that experienced a percentage increase (8.7 percent) in the number of total households, followed by the 5.9 percent increase experienced by Nicholas County. These percentage increases exceeded the percentage increase experienced statewide (0.4 percent). Kentucky posted the largest percentage increase in household formations with 9.2 percent.

From 1990 to 2000, McDowell County experienced the largest percentage decrease (-13.0 percent) in the number of total households, followed by the North Elkin District (-3.4 percent), District 1 (-

3.5 percent), and Wyoming County (-0.3 percent). The remaining study area jurisdictions experienced increases in their respective number of total households. However, the percentage increases enumerated for the Hamilton (3.2 percent) and Hardee (1.6 percent) Districts were less than the percentage increase experienced statewide (6.9 percent). Likewise, the percentage increases enumerated for Letcher County (3.7 percent) and the Blackey Division (1.6 percent) were significantly lower than the percentage increase experienced by Kentucky (15.3 percent).

Table 6 demonstrates the family and non-family growth trends experienced by the study area states, counties, and county subdivisions over the 1980 to 2000 period. As shown, all jurisdictions experienced similar trends; whereby, the proportion of family households decreased while the proportion of non-family households increased over the 1980 to 2000 census periods. These trends are identical to the national level trends; whereby, the percentage of family households decreased from 73.9 percent in 1980, to 70.8 percent in 1990, to 68.8 percent in 2000, and the percentage of non-family households increased from 26.1 percent in 1980, to 29.2 percent in 1990, and to 31.2 percent in 2000.

Similar to nationwide trends, the household sizes for the study area states, counties, and subdivisions are decreasing. Table 7 presents the average household sizes (i.e., number of persons per household) for each study area jurisdiction during the 1980, 1990, and 2000 census periods. According to the U.S. Census Bureau, "changes in fertility, marriage, divorce, and mortality, have all contributed to declines in the size of the American household"(Fields 2001).

6. Race

As presented in Table 8, the 1980, 1990, and 2000 Census enumerations show that an overwhelming majority of the residents surveyed within the study area jurisdictions considered themselves to be white. Exceptions are noted, however, for McDowell County and the North Elkin District; whereby, the number of whites during all three census periods was proportionally lower than the remaining study area jurisdictions. Moreover, the percentage of whites in the North Elkin District was lower than the percentage of whites in McDowell County for all three census periods. These trends suggest that the North Elkin District has one of the highest concentrations of minorities in McDowell County.

B. EDUCATIONAL ATTAINMENT

Educational attainment is of primary importance to the general welfare and economic vitality of a local area. Skills and abilities required to compete in the labor market are acquired through the educational process. These skills, in turn, provide a degree of economic security for the individual and tend to benefit the overall economic and employment conditions of a local area.

Educational attainment data were obtained from the 1980, 1990, and 2000 Censuses for those persons 25 years and over. These raw data were then used to determine the percentage of persons who attained a high school level education (i.e., 12 years of education) and those who attained a college level education (i.e., 13 years and over). Table 9 presents the educational attainment trends

for the study area states, counties, and subdivisions.

Within each study area jurisdiction, the majority of persons age 25 years and over obtained a high school level education for all census periods. From 1980 to 2000, the educational attainment levels for jurisdictions in West Virginia increased, while those in Kentucky decreased slightly. However, in both states, the proportion of persons obtaining a college level education increased significantly. These trends indicate that the education levels for the study area jurisdictions are improving.

C. PLACE OF WORK

Place of work data were gathered from the 1980, 1990, and 2000 Censuses for the study area states, counties and subdivisions to establish trends in the daily migrations of the local workforce. This information will indicate the daily commuting patterns as being within or outside the worker's place of residence.

As shown in Table 10, the majority of the study area jurisdictions' workers age 16 years and over indicated they worked in their resident counties during the 1980 through 2000 census periods. However, between 1980 and 2000, the proportion of those who worked in their resident counties steadily declined while the proportion of those who worked outside their resident counties increased.

The trends in the number of workers who worked outside their state of residence reveal that large changes occurred in most of the study area jurisdictions. In Wyoming County, for example, the number of residents who worked outside the state of West Virginia increased from 45 to 145, or by 222 percent, over the 1980 to 1990 period. Likewise, the number of District 1 residents (Note, the place of work trends for District 1 were calculated by combining the 1980 and 1990 values enumerated for the Barkers Ridge and Slab Fork Districts) who worked outside West Virginia increased from 25 to 80, or by 220 percent, during this same period. The North Elkin District also experienced a substantial shift in commuting patterns; whereby, the number of resident workers working outside West Virginia increased from 56 to 123, or by 120 percent. Other study areas, such as the Hamilton District and Nicholas County also experienced notable increases in the number of resident workers who were employed outside West Virginia. West Virginia, as a whole, experienced a 31 percent increase in the number of workers employed outside its borders between 1980 and 1990.

These place of work trends suggest that the local labor force has been impelled either by their own choosing (e.g., change of residence or employment) or by some change in the local labor market to seek employment opportunities located outside of their state or county of residence.

D. EMPLOYMENT AND OCCUPATION STATUS

An analysis of the local occupation types and industry sectors provide insight to the structure of the local economy and the changes that it has gone through between the 1980 and 2000 census periods.

Employment data were collected from the 1980, 1990, and 2000 censuses to characterize occupation types and industry sectors within which the local population (i.e., persons 16 years and over) is employed for the study area states, counties, and subdivisions. These raw data were then used to express the percentage of total persons employed (i.e., persons 16 years and over) in each industry.

1. Employment by Industry Type

The "Agriculture, Forestry, Fisheries, and Mining" industry served as the largest sector of employment for all study area jurisdictions as enumerated by the 1980 Census, see figures 15 through 22. However, this industry was not the largest sector on a state wide basis for either West Virginia or Kentucky. Both the 1990 and 2000 Census figures show a significant decrease in the percent of total workers employed by this sector. The 1990 Census, unlike the 1980 Census, reported the "Mining" industry separate from the "Agriculture, Forestry, and Fisheries" sector (Note, for comparison with the 1980 data, the 1990 data for these two industry sectors were combined). As illustrated in Figure 16, the mining industry comprised the majority of the workforce employed by the "Agriculture, Forestry, Fisheries, and Mining" sector. Moreover, the same trend possibly holds true for the 1980 Census data, because 1980 employment data collected from the U.S. Bureau of Economic Analysis for the study area counties show the majority of workers were employed by the "Mining" industry. Therefore, as demonstrated in Table 11, the majority of job losses experienced in the "Agriculture, Forestry, Fisheries, and Mining" sector was mainly due to the employment decreases in the mining industry.

Figure 15 also demonstrates that all of the study area jurisdictions experienced increases in the percentage of total persons employed in the "Professional and Related Services" industry sector over the 1980 to 2000 period. (Note: the "Professional and Related Services" figures recorded for the 2000 Census period were derived by adding the amount of individuals engaged in "Professional Services" and "Social Services"). Other service industry sectors, such as "Finance, Insurance, and Real Estate," also posted increases in the percentage of total persons employed within each study area jurisdiction. These statistics typify the national employment trends; whereby, the service sectors are employing a greater share of the nation's labor force than non-service industry sectors such as agriculture, mining, and manufacturing.

Figures 16 through 36 provide a more detailed representation of the distributions of employment by industry for each study area state, and county for the time period of 1980 to 2000.

2. Economic Base Analysis

There are a variety of techniques for conducting an economic base analysis. The objective of all economic base analyses is to identify the economic sectors that bring income into a local economy from outside the economy. These sectors are variously named "export base" or "basic industries". Manufacturing, tourism, and raw materials production are all economic sectors that typically sell much of their output to persons and firms outside of the local economy. Such sales bring money into the local economy, providing for spending on products and services produced both within and outside of the local economy.

One way to identify industries that form an economy's economic base is to examine each industries "location quotient". A location quotient is a ratio that compares an industry's share of local employment at the local level with the same industry's share of employment of the larger economy (typically the nation or the state).

A location quotient of one reflects a condition in which the share of employment in the industry is the same at the local and reference level. A location quotient greater than one indicates that the industry employs a larger share of local employment than it does at the reference level.

Interpretation of location quotients requires the following assumptions: labor productivity, total employment rates, and demand patterns are the same in the local economy and the reference economy; and the reference economy is on net self-sufficient (it produces what it consumes, and consumes what it produces). Under these conditions, a location quotient of one for an industry (say, health services) suggests that the local economy is producing health services at the same rates as the reference economy and is therefore producing exactly enough health services to meet local demand--no more and no less. A location quotient greater than one suggests that the local economy is producing more than enough health services to meet local demand; persons from outside the local economy may be coming to this area for health services. The "excess" health services is essentially a net export from the local economy and a source of outside income.

A location quotient analysis requires employment data that records employment by place of work and by industry. These data are available at the county level through the Census Bureaus's "County Business Patterns" informational series, through the U.S. Bureau of Economic Analysis, and through the state departments of labor. The county is the finest level at which such data are available, as well as the smallest level that areas in the study area could in any way be considered "economies". The County Business Patterns data were used because they provide the most consistent (across states) data at the most detailed industry disaggregations.

The formula used to calculate the LQ ratio for each industry is as follows:

$$LQ_i = \frac{E_i}{E} \div \frac{E_{Ni}}{E_N}$$

Where:
E = Total local employment
E_i = Total local employment in industry i
E_N = Total regional employment
E_{Ni} = Total regional employment in industry i

Interpreting the calculated LQ ratios is simple because only three general outcomes are possible. These are as follows:

LQ < 1.0 = All Employment is Non-Basic: A LQ that is less than one suggests that local employment is less than was expected for a given industry. Therefore, that industry is not even meeting local demand for a given good or service. Therefore, all of this employment is considered non-basic by definition.

LQ = 1.0 = All Employment is Non-Basic: A LQ that is equal to one suggests that the local employment is exactly sufficient to meet the local demand for a given good or service. Therefore, all of this employment is also considered non-basic because none of these goods or services are exported to non-local areas.

LQ > 1.0 = Some Employment is Basic: A LQ that is greater than one provides evidence of basic employment for a given industry. When an LQ > 1.0, the analyst concludes that local employment is greater than expected and it is therefore assumed that this "extra" employment is basic. These extra jobs then must export their goods and services to non-local area which, by definition, makes them basic sector employment.

Using industry sector employment data from the 1990 Census, the LQ analysis was applied to the study area county subdivisions to identify any specializations in their respective economies. These "local economies" were compared to their respective states (i.e., West Virginia and Kentucky), which represent the "reference economies." Table 12 presents the results of this analysis. These results suggest that all of the subdivisions specialize in the mining industry. Moreover, the degree to which each subdivision specializes in this industry is high, given the level it exceeds one. Based on this assumption, the Blackey Division's economy is more highly specialized in the mining industry than the other subdivisions.

A closer examination of local economic activity may be obtained by analyzing data from the U.S. Census Bureau's County Business Patterns database. County Business Patterns is an annual series

that provides subnational economic data by industry. The series is useful for studying the economic activity of small geographic areas, such as zip codes areas. Table 13 presents the 1997 County Business Patterns information collected for the selected zip codes for the communities of Naugatuck, West Virginia, and Carcassone, Kentucky (The zip code fo Kyle, WV, was not included in the County Business Patterns database). As shown in Table 13, Naugatuck had a total of five establishments; two of which were in the mining industry sector and employed the largest volume of persons (500-999 employees). Carcassone had four establishments; none of which were in the mining industry.

3. Employment by Occupation Type

Figures 37 through 58 illustrate the occupation types within which the study area jurisdictions' labor forces are employed during the 1980 through 2000 periods. The overall trends show a shift from a "blue collar" to a "white collar" workforce; whereby, the proportion of persons employed in the "Precision Production Craft, and Repair Occupations;" and "Operators, Fabricators, and Laborers" decreased, while the proportion of persons employed in the "Managerial and Professional Occupations;" "Technical, Sales, and Administrative Support Occupations;" and "Service Occupations" increased.

The increases within the white collar occupations were, however, mixed. For example, according to the 1990 Census, the county-level growth in the percentage of persons employed within the "Managerial and Professional Occupations" exceeded the growth experienced by the study area county subdivisions; thereby, suggesting the majority of the county-level growth occurred outside the study area subdivisions. However, data from the 2000 Census shows that this trend disseminated between 1990 and 2000 as most county subdivisions recorded levels of growth similar to that at the county level. This data suggests that these case study jurisdictions are growing at a pace similar to neighboring communities.

4. Civilian Labor Force Status

Civilian labor force data for persons 16 years and over were collected from the 1980, 1990, and 2000 Censuses and was used to calculate the unemployment rate trends as shown in Table 14. As shown, the unemployment rates for the study area states, counties, and subdivisions increased over the 1980-1990 period; thereby, reflecting a decline in the number of local employment opportunities. Moreover, the 1980 and 1990 unemployment rates for the study area counties and subdivisions exceeded–and in some cases far exceeded–the unemployment rates enumerated for their respective states, which suggests the local economic conditions were more severe than their states as a whole.

The greatest unemployment rate increases were posted by McDowell County and its North Elkin District where from 1980 to 1990, their unemployment levels rose from 13.9 percent to 28.2 percent, and from 15.3 percent to 28.2 percent, respectively. Other notable increases in unemployment rates were experienced by Mingo County (11.3 percent to 18.4 percent) and its Hardee District (9.9 percent to 22.9 percent); and Wyoming County (10.2 percent to 19.7 percent) and District 1 (12.4 percent to 20.1 percent).

Between the period of 1990 and 2000, unemployment rates in the all jurisdictions surveyed began to noticeably decrease. In some cases, such as those in McDowell County's North Elkin District, the Hardee District of Mingo County, and the Blackey Division of Letcher County (KY), the unemployment rate tumbled over 15 percent between 1990 and 2000. The sharp declines experienced during this decade contributed to an overall decline in unemployment rates between 1980 and 2000.

E. INCOME LEVELS

The analysis of income levels over time allows us to assess how rich (or poor) an area is compared to others around it, as well as to determine if an area has been growing richer or poorer over time. Income statistics are grouped into three main categories by the U.S. Census Bureau and are defined as follows:

> Per Capita Income - Calculated by dividing the aggregate income for persons 15 years and over by the total number of persons in the group.
>
> Median Family Income - A median income value representing family household units.
>
> Median Household Income - The median income value representing all households.

The income values reported for these three categories represent the total money income received by persons in the calendar year preceding the census (e.g., 1999 for 2000). Total money income, as defined by the Census Bureau, is the sum of amounts reported separately for income sources such as wages and salaries; non-farm self-employment; farm self-employment; interest, dividends, and rentals; Social Security; unemployment compensation; welfare or other public assistance; and all other income sources.

The total money income reported to the Census Bureau is gross income (i.e. prior to any subtractions for taxes, social security, or any other payroll deductions). Items such as receipts from the sale of property (unless for the purpose of an ongoing business enterprise), gifts, inheritances, or tax refunds are included in this figure.

Because of inflation an area of declining real income may appear to have growing incomes, based on the raw census-reported money income values. To adjust for inflation and demonstrate the real growth in income values, the U.S. Bureau of Labor Statistics's Consumer Price Index (CPI) was used to inflate the total money income values from one census to the next (e.g., 1990 values inflated to 2000 dollars).

The 1979, 1989, and 1999 per capita, median household, and median family income growth trends for the United States, study area states, counties, and subdivisions are shown in Tables 15 through 17. As shown in Table 15, the 1989 *reported* per capita incomes appear to exceed the 1979 *reported* per capita incomes. But when the 1979 per capita incomes are inflated to 1989 dollars, the real growth in per capita income levels decreased for all study area counties and subdivisions; thus,

demonstrating the reported 1979 per capita income levels failed to match the increases in the cost of living (i.e., amount of money needed to buy the goods and services necessary to maintain a specified standard of living). Additionally, income figures for 1989, when inflated to 1999 dollars, also fail to match or exceed the 1999 reported figures. These calculations show that income in the study areas continues to increase at a slower rate than the cost of living. Similar trends were also experienced by all study area jurisdictions for their respective median household and median family income levels.

The assessment of how rich or poor the study area jurisdictions are may also be characterized by analyzing the trends in the percentage of total households receiving social security and public assistance income for the reporting periods of 1979 through 1999.

Social Security, for example, provides a base level of income for most retired people and represents a fixed income with which senior age persons rely on to support their standard of living. Communities experiencing an increase in the number of senior age persons will experience an increase in the number of households receiving Social Security payments; possibly, producing a stabilizing effect on a community's overall upward mobility and affluence.

Public assistance income is provided to qualified low-income persons or families to assist in meeting their basic survival needs. The number of households receiving public assistance provides a measure of how poor a community may be. Typically, an increase in the number of households receiving public assistance indicates an increase in the number of low-income persons or families.

Data regarding the total number of households receiving social security and public assistance income were collected from the 1980, 1990, and 2000 Censuses for the study area states, counties, and subdivisions. These data represent the total number of households that reported receiving social security and public assistance income in the calendar year preceding the census (e.g., 1999 for 2000). These raw data were then used to calculate the percentage of the total number of households receiving such incomes. The results are shown in Tables 18 and 19.

As shown in Table 18, the majority of the study area jurisdictions experienced an increase in the proportion of households receiving social security income payments each Census year. The North Elkin District and McDowell County had the largest share of their total households receiving social security income payments in both 1989 and 1999. These trends are reflective of the age group trends discussed in Section A.3.

Table 19 shows that all study areas experienced increases in the proportion of households receiving public assistance income over the 1979 and 1989 Census reporting periods. Moreover, the percentage of households receiving public assistance in study area counties and subdivisions far exceeded the percentage of households receiving public assistance at the state levels. However, this trend reversed in the 1999 Census reporting period as all jurisdictions recorded a decrease in the percentage of households receiving public assistance. In some cases, such as the Blackey Division in Lethcher County (KY), and the Hardee District in Mingo County (WV), the percentage of households receiving public assistance decreased by over 11 percent.

F. POVERTY STATUS

Poverty is one of the key statistical tools used to characterize a population. The U.S. Census Bureau uses a set of money income thresholds that vary by family size and composition to determine who is poor. If a family's total income is less than the Census Bureau's pre-established poverty-level threshold, then that family, and every individual in it is considered poor. The poverty thresholds do not vary geographically, but they are updated annually for inflation using the Consumer Price Index. The official poverty definition counts total money income before taxes and does not include capital gains taxes and noncash benefits (e.g., public housing, Medicaid, and food stamps).

Table 20 presents poverty levels as measured by the percent of persons living in households with an income below the poverty level. All study area jurisdictions, except for Kentucky, experienced an increase in the proportion of the persons whose income is below the poverty threshold during the 1979 and 1989 census reporting periods. The largest percentage point increases were experienced by McDowell County (14.2), and the Hardee (12.8) and North Elkin (12.7) Districts. More importantly, however, is that the percentage point increases of all study area counties and subdivisions exceeded the percentage point increases experienced by their respective states. Moreover, the poverty levels in the study areas were considerably higher than the state levels, both in 1979 and in 1989.

On the other hand, the 1999 Census reporting period shows that nearly every study area jurisdiction experienced a decrease in the percent of persons living in households with an income below the poverty level. The largest decrease was recorded in the Hamilton District (10.8 percent decrease) followed by the Blackey Division (9.3 percent). Additionally, between 1989 and 1999 nearly every jurisdiction reported a percentage point decrease that was greater than their respective state levels.

G. DEMOGRAPHIC SUMMARY

The following presents a summary of demographic changes in the format of questions with yes or no answers per case study area.

Did employment increase in 1990 as compared to 1980 for each study area?

- Hamilton District, Nicholas County, WV (Yes)
- North Elkin District, McDowell County, WV (No)
- Hardee District, Mingo County, WV (No)
- Blackey Division, Letcher County, KY (Yes)
- District One, Wyoming County, WV as the Control Area (No)

Did employment decrease in 2000 as compared to 1990 for each study area?

- Hamilton District, Nicholas County, WV (Yes)
- North Elkin District, McDowell County, WV (No)

- Hardee District, Mingo County, WV (Yes)
- Blackey Division, Letcher County, KY (No)
- District One, Wyoming County, WV as the Control Area (Yes)

Did real per capita income increase in 1990 as compared to 1980 for each study area?

- Hamilton District, Nicholas County, WV (No)
- North Elkin District, McDowell County, WV (No)
- Hardee District, Mingo County, WV (No)
- Blackey Division, Letcher County, KY (Yes)
- District One, Wyoming County, WV as the Control Area (No)

Did real per capita income decrease in 2000 as compared to 1990 for each study area?

- Hamilton District, Nicholas County, WV (No)
- North Elkin District, McDowell County, WV (Yes)
- Hardee District, Mingo County, WV (No)
- Blackey Division, Letcher County, KY (No)
- District One, Wyoming County, WV as the Control Area (Yes)

Did the number of persons working in their resident county increase from 1980 to 1990?

- Hamilton District, Nicholas County, WV (Yes)
- North Elkin District, McDowell County, WV (No)
- Hardee District, Mingo County, WV (No)
- Blackey Division, Letcher County, KY (No)
- District One, Wyoming County, WV as the Control Area (No)

Did the number of persons working in their resident county decrease from 1990 to 2000?

- Hamilton District, Nicholas County, WV (No)
- North Elkin District, McDowell County, WV (Yes)
- Hardee District, Mingo County, WV (No)
- Blackey Division, Letcher County, KY (Yes)
- District One, Wyoming County, WV as the Control Area (Yes)

Did unemployment decrease in 1990 as compared to 1980 for each study area?

- Hamilton District, Nicholas County, WV (No)
- North Elkin District, McDowell County, WV (No)
- Hardee District, Mingo County, WV (No)
- Blackey Division, Letcher County, KY (No)

- District One, Wyoming County, WV as the Control Area (No)

Did unemployment increase in 2000 as compared to 1990 for each study area?
- Hamilton District, Nicholas County, WV (No)
- North Elkin District, McDowell County, WV (No)
- Hardee District, Mingo County, WV (No)
- Blackey District, Letcher County, KY (No)
- District One District, Wyoming County, WV as the Control Area (No)

Did educational attainment increase in 1990 as compared to 1980 for each study area?

- Hamilton District, Nicholas County, WV (Yes)
- North Elkin District, McDowell County, WV (Yes)
- Hardee District, Mingo County, WV (Yes)
- Blackey Division, Letcher County, KY (Yes for college), (No for high school)
- District One, Wyoming County, WV as the Control Area (Yes)

Did educational attainment increase in 2000 as compared to 1990 for each study area?

- Hamilton District, Nicholas County, WV (Yes)
- North Elkin District, McDowell County, WV (Yes)
- Hardee District, Mingo County, WV (Yes)
- Blackey Division, Letcher County, KY (Yes)
- District One, Wyoming County, WV as the Control Area (Yes)

Did population increase in 1990 as compared to 1980 for each study area?

- Hamilton District, Nicholas County, WV (No)
- North Elkin District, McDowell County, WV (No)
- Hardee District, Mingo County, WV (No)
- Blackey Division, Letcher County, KY (No)
- District One, Wyoming County, WV as the Control Area (No)

Did population decrease in 2000 as compared to 1990 for each study area?

- Hamilton District, Nicholas County, WV (Yes)
- North Elkin District, McDowell County, WV (Yes)
- Hardee District, Mingo County, WV (Yes)
- Blackey Division, Letcher County, KY (Yes)
- District One, Wyoming County, WV as the Control Area (Yes)

Did non-white race increase in 1990 as compared to 1980 for each study area?

- Hamilton District, Nicholas County, WV (No)
- North Elkin District, McDowell County, WV (No)
- Hardee District, Mingo County, WV (Yes)
- Blackey Division, Letcher County, KY (Yes)
- District One, Wyoming County, WV as the Control Area (No)

Did non-white race increase in 2000 as compared to 1990 for each study area?

- Hamilton District, Nicholas County, WV (Yes)
- North Elkin District, McDowell County, WV (Yes)
- Hardee District, Mingo County, WV (No)
- Blackey District, Letcher County, KY (No)
- District One District, Wyoming County, WV as the Control Area (No)

Did the number of miners increase during mining (1990)?

- Nicholas County, WV (No)
- McDowell County, WV (No)
- Mingo County, WV (Yes)
- Letcher County, KY (No)
- Wyoming County, WV (No)

Did the number of miners decrease in the after mining case study condition (2000)?

- Nicholas County, WV (Yes)
- McDowell County, WV (Yes)
- Mingo County, WV (Yes)
- Letcher County, KY (Yes)
- Wyoming County, WV (Yes)

Did the number of persons receiving public assistance decrease in 1990?

- Hamilton District, Nicholas County, WV (No)
- North Elkin District, McDowell County, WV (No)
- Hardee District, Mingo County, WV (No)
- Blackey Division, Letcher County, KY (Yes)
- District One, Wyoming County, WV as the Control Area (Yes)

Did the number of persons receiving public assistance increase in 2000?

- Hamilton District, Nicholas County, WV (No)
- North Elkin District, McDowell County, WV (No)

- Hardee District, Mingo County, WV (No)
- Blackey Division, Letcher County, KY (No)
- District One, Wyoming County, WV as the Control Area (No)

Did the number of persons receiving social security income decrease in 1990, as compared to 1980?

- Hamilton District, Nicholas County, WV (Yes)
- North Elkin District, McDowell County, WV (No)
- Hardee District, Mingo County, WV (Yes)
- Blackey Division, Letcher County, KY (Yes)
- District One, Wyoming County, WV as the Control Area (No)

Did the number of persons receiving social security income decrease in 2000, as compared to 1990?

- Hamilton District, Nicholas County, WV (No)
- North Elkin District, McDowell County, WV (Yes)
- Hardee District, Mingo County, WV (Yes)
- Blackey Division, Letcher County, KY (No)
- District One, Wyoming County, WV as the Control Area (No)

Did poverty status decrease in 1990, as compared to 1980?

- Hamilton District, Nicholas County, WV (No)
- North Elkin District, McDowell County, WV (No)
- Hardee District, Mingo County, WV (No)
- Blackey Division, Letcher County, KY (No)
- District One, Wyoming County, WV as the Control Area (No)

Did poverty status decrease in 2000, as compared to 1990?

- Hamilton District, Nicholas County, WV (Yes)
- North Elkin District, McDowell County, WV (No)
- Hardee District, Mingo County, WV (Yes)
- Blackey Division, Letcher County, KY (Yes)
- District One District, Wyoming County, WV as the Control Area (Yes)

V. COMMUNITY NARRATIVE SUMMARIES

This section of the report summarizes all the interviews collected to date in each of the case study communities, Werth, WV, Kyle, WV, Naugatuck, WV, Scarlet, WV, and Carcassonne, KY. In addition, interview summaries are included for Superior Bottom, WV and Blair, WV. Each

communities' interviews are summarized with selected discussion and quotations taken from multiple interviews from that community. The discussion is organized into three main aspects of community life (social, physical and economic) and the future of each community.

A. WERTH, HAMILTON DISTRICT, NICHOLAS COUNTY, WEST VIRGINIA

The community of Werth, WV currently consists of approximately 20 homes strung along Route 55 about one hour northeast of Charleston. Unlike many of the other communities in which interviews were collected, Werth at one time was home to a large employment generator other than the coal industry – the Ely Thomas saw mill. Residents reported varying employment benefits and reliance upon the mill; however, the mill itself was reported by several residents as one of the largest of its kind in the Eastern United States. The saw mill closed in the 1950s. Another distinguishing factor is that Werth is not concentrated in an isolated hollow or along a stream corridor, but rather along a county road between the county seat, Summersville, and points north and west. Werth lies just a few miles from Highway 19 which , according to residents, was completed in approximately 1975.

Existing Lumber Yard on Site of Ely Thomas Saw Mill

By varying accounts surface mining came into the Werth community area in the 1950s. At that point in time, the saw mill had reportedly already burned and been shut down; therefore, prior to surface mining the community was employed in a variety of manners including lumber, underground coal mining and farming. Residents report that Werth was a small, incorporated community of many families and some businesses, largely focused around the saw mill. Residents interviewed could not universally recall exactly when surface mining began in the Werth area; however, reports ranged from 1945 to the early 1950s.

1. Social Community

Nearly all of the interviewed residents in Werth indicated a sense of community based upon heredity of land and family and neighbor ties to the area. Feelings expressed regarding any sense of social community by the residents in Werth were less fervent and less focused on a sense of social structure and support within the Werth area than in some other communities. Werth was described as a nice place to live, to hunt and to farm. One resident stated that they moved to Werth because, "I always liked elbow room."

With the introduction of surface mining in the Werth area, residents reported little or no change in the social aspects of the community. Declining population in the area since the 1950s was believed to be linked to closure of the mill and the industry-wide decline in mining employment. Population shifts were a result of families and young, employment-age family members leaving the area in search of better job opportunities. None of the residents interviewed felt that the population change in the community was related to impacts from the presence of surface mining, rather the feelings expressed indicated that the community was accustomed to the mining industry and leaving was not considered for that reason. One family described the population shift as follows:

Excerpt From Single Interview:

> **Resident:** Well, we lost a school down here. The umm, all the young people grew up and moved away.
>
> **Interviewer:** Had any of them been employed with the coal company? That you could say 'Well, when the coal company left they lost those jobs and moved away and therefore the school had to close?'
>
> **Resident:** I don't think that many of them; some of them was employed by the coal companies. But up and down through here we are just all getting older and nobody sells any of their land and so…
>
> **Interviewer:** There aren't any more kids to go to school?
>
> **Resident:** And the kids just grew up like ours done. He is like….he married a girl from Pittsburgh, by the way. And they both teach school in Parkersburg now.
>
> **Interviewer:** So, really most of them moved away for jobs?
>
> **Resident II:** Most of them. The ones that didn't want to work in the mines left.
>
> **Resident:** Well, when they went to college, there wasn't anything around here for them to do. I know my granddaughter went to, she is up next to Washington, which isn't a good place to be right now.

The interviews indicate that many of the remaining residents are of retirement age. One resident speculated that without family ties to Werth, there was little draw to move into the community now. Another resident believed that the population, while small was stable, and economic growth in the tourism industry was helping to stabilize the area.

None of the residents interviewed in Werth had chosen to leave, if they had left, because of the presence of surface mining, and none reported that the coal companies had offered to purchase their home or land for anything other than mining prospects. In this manner, Werth is different from a number of the other areas where interviews were collected.

No other specific social impacts or benefits were reported by residents; however when queried about changes in their community, one resident speculated, "Well, we don't have the fields and everything, but yeah it probably psychologically might have [changed]. But as far as money is concerned I would say probably not."

2. Physical & Economic Community

Because Werth is located along a stretch of flat, bottomland, several residents reported a tradition of family farms, for subsistence and some commercial crops. Interviewers were told that a small underground mine was locally owned and operated in Werth, but none of the interviewed residents cited this an important local employer. The Ely Thomas lumber company was cited as a far more important economic generator. By the end of 1950s, the saw mill was no longer an employer in the area, and residents reported that employment sources ranged from coal mining to related industries, such as the railroad.

While some physical changes were reported by a number of residents, reports of economic benefits during the surface mining period varied. Overall, residents felt that changes in Werth happened overtime as a result of aging residents and younger generations moving out for jobs and other opportunities. Most residents felt that the presence of large-scale surface mining neither had long-term boost or negative impact on the community. When queried about the benefits brought to the community by the presence of surface mining, on resident replied: "There probably was at the time they were here, there was more money spent here that is natural. But no - the people moved and the money didn't stay here and the coal left. There may have been. There had to be something but I do not know what it would be." Another resident however indicated that the mining industry in the Werth area had contributed significantly to the local economy and provision of community facilities.

Excerpt From Single Interview:

> **Interviewer II:** Does this community itself, in terms of Werth, do you feel it has benefitted in terms of employment opportunities the mining operations offered in this area?
>
> **Resident:** Absolutely... Otherwise they would of have to go out of state. Which a lot of people in other parts, like the northern part of West Virginia where there's not many mines and not much of anything else… and I can remember 25-30 years ago they had to go

to Ohio, they had to go to South Carolina somewhere for employment.

The resident went on to say:

I know that personally because my husband had very much to do with that. It was… he's the one that ram-rodded the site for the ball fields and the high school. The new high school is right here on 19.

Interviewer: Can you tell me a little bit about that? What do you mean ram-rodded?

Resident: He furnished the equipment; he came down and did a lot of the work himself at no cost to the county.

Interviewer: He helped build it and see that it was built?

Resident: He didn't build, but he prepared the site with equipment, his own equipment from his company.... He brought his men down and he paid his men but he didn't charge anybody for it. He also was the fund-raiser for the hospital and because he was known, so well known in the community, he was able to tap the coal industry get money and got funds to start the Summersville, to expand I am sorry, to expand the Summersville hospital.

Residents overall did not feel that the community of Werth was significantly changed by the presence of surface mining aside from landscape changes in mined areas; however, some changes to specific areas were reported. For the majority of the residents interviewed two factors seemed to have shaped the types of changes reported. First, surface mining in the Werth area was carried out by at least two separate companies; and second, adjacent surface mining was reported to pre-date current environmental legislation. The second of these factors was reported to have significantly shaped the quality of work and the related physical impacts that were reported.

Surface mining was reported to have occurred from the 1950s to the present; however, most of the residents interviewed focused on physical changes in the community related to mining prior to the 1970s. In their opinion, mining methods during this period differed from current practices. One important perceived difference included the level of blasts feasible and the lack of regulations regarding disposal of overburden. Few, if any, residents reported any instances of significant dust, or damage to their homes, but some fly-rock was reported. In other communities problems with well water are often cited as having a relationship to blasting. Two residents reported problems with well water; however, they did not claim that this was certainly attributable to surface mining. More significantly in Werth, mining companies were cited as having dumped rock and spoil over the hill into the bottomland, and therefore, into the stream running parallel along the southern properties of the community.

"And when they dumped that refuse, them rocks and stuff over the hill, you know just dumped it over there, you got to see that to believe it, what that is."

Another resident described the same results:

> "That was top mines, strip mines. And they didn't have no regulations they just throwed it all over the hill, because they wanted to and I guess it was more convenient for them than to pile it up."

As a result of the clogged stream, properties and farmable land were flooded. One resident describes the situation on his property following the clogging of the stream:

> "...when they stopped it up it backed it up and stopped it all up. It filled in out here until I had a swamp in the yard. It was a swamp....I had seen these trucks, with the bed down on the ground. That much mud. And we could not bring our cars. And had to leave our cars over on the main highway. Yes, you couldn't get it over here and back because of the mud in the road....Those trucks I had seen buried down right out here until the bed was in the ground. They would have to get dozer down in here and pull them out. Now this was Tassa Coal Company. T, A, SS, A, Tassa Coal Company."

Another resident described it as follows:

> "I am talking about rock, slate, goobs- probably a little coal - anything that they, dirt, anything that they would dig up on top of the mountain, when it rained it came down...It filled up the creeks. It filled up the creek beds and the creek would be wandering around and basically make into a swamp. Which the wetlands commission now want it to be a swamp but it never was a swamp before..."

Other physical changes described included impacts to habitat and wooded areas previously used for hunting and the use of old coal rail lines for trails. The 'rails to trails' examples was cited as another way that the community and the burgeoning tourism industry has benefitted long-term from the historic presence of the coal industry in Werth . One resident stated:

> "...[the mountaintops] basically, for a period of time, become grasslands. Which for the all the vegetation that comes is good for the animals and the birds and environment… for them to prosper. I think this "Keep West Virginia Green"; the coal miners did not fall short in returning their areas to green."

3. Companies and Communities

When queried about interactions between the coal companies and the communities most residents felt there was very little interaction that wasn't initiated by residents approaching the company with specific complaints. Residents did cite having received notification of blasting activity, but did not report having seen specific permits advertised for mining activity in Werth. All the interviewed residents, who read the paper, currently see permit notices regarding new mining permit activity advertised, and generally felt these were adequate, if sometimes difficult to read. Specific

complaints were generally in regards to illegibility of the maps; however one resident stated,

> "...if I didn't see the map clearly I would read the description."

An important theme echoed in nearly all of the interviews collected from the study communities was the varying levels of communication and responsiveness observed among different mining companies. Werth area residents perceived that one company was significantly more responsive to complaints and more responsible in their mining methods than another.

> "Now the company that came in after that was Hobet. And Hobet was all together different. I don't care for the mining anyway, but if you are talking about mountaintop mining. But, Hobet was 100% better than Tassa Coal Co."

Another resident stated:

> "The damage that first company done - that couldn't be reclaimed. You roll a boulder over, as big as this house, in one of them hollers you can't get it back."

Just as the individual coal companies were reported to have different work qualities, residents also expressed different levels of satisfaction gained from the different coal companies' attempts to address community complaints. While most residents felt that the coal companies had caused some physical changes to the community, they reported varying levels of responsiveness to complaints. One company was perceived as better at providing public information and addressing complaints than another. Only one resident interviewed, felt that the coal companies had done a completely adequate job in dealing with the community and had followed the letter of the law with regard to public information.

4. Summary and Community Future

Residents in Werth had varying opinions about the benefits and impacts from adjacent surface mining to the community. One consistent report, from interviewed residents who had lived in the community since the 1950s was that they felt early surface mining in the community had changed the physical value of the bottomland. The land is deemed by residents as no longer suitable for farming, an aspect of community life that had been a staple for some families in Werth. To the dismay of some of the interviewed residents, the bottomland in Werth is now designated as wetlands. A fact that several residents felt was foolish, as they believed the clogging stream to be directly related to the mining techniques of the earliest company to surface mine near Werth.

Overall, opinions regarding the positive and negative impacts from surface mining were greatly varied. However, residents consistently reported that the presence of surface mining never prompted them to leave, or try to leave the community. Population shifts seem entirely attributable to a lack of jobs or a desire to work in an industry other than mining.

Interviewed residents felt the economic future of community is likely tied more closely to overall

diversification of the economy in the region. "This area has shifted to timber and tourism." Residents felt that any market for property would now rely on proximity to jobs elsewhere in the region and the mobility of the automobile.

One resident summed up his experiences living with mountaintop mining in Werth through the course of his life as follows:

> "Well you can't see it now, but there use to be a big mountain up on top of that mountain there. Well it is the same mountain, but there was a big knob. It was a lot higher and everything. They just took everything that they didn't want and threw it over the hill and then hauled the coal down the mountain. And that is just what they could do. And we suffered impacts, not at the time it was happening, but nature took it's course from everything that came down here."

B. KYLE, NORTH ELKIN DISTRICT, MCDOWELL COUNTY, WEST VIRGINIA

The community of Kyle, WV is located within the Elkhorn Creek watershed area and consists of less than 100 homes with a church along highway 52. The methodology described in section II.C of this report was followed to identify interviewees; however, individuals selected for interviews could not be located or did not wish to be interviewed. The process beginning with the selection of randomly selected parcel numbers was repeated without success. No interviews were conducted for the Kyle case study community.

C. NAUGATUCK, HARDEE DISTRICT, MINGO COUNTY, WEST VIRGINIA

Located at the junction of state Route 65 and US Route 52 in Mingo County, Naugatuck is primarily a residential community with a few hundred homes. The community of Naugatuck has a small commercial area comprised of a grocery store, a post office, and a branch of the local Bank of Mingo. Nearby a water and sewer plant is being developed to serve area residents, including those who reside in informal neighborhoods along Pigeon Creek.

Within a few miles of Naugatuck to the northeast, there are several surface mining permits which total approximately 900 + acres. US Route 119 crosses a portion of the Hardee District; however, the largest employment center within the immediate region, Williamson, does not lie within the Hardee District.

The methodology described in section II.C of this report was followed to identify interviewees; however, individuals selected for interviews could not be located or did not wish to be interviewed. The process beginning with the selection of randomly selected parcel numbers was repeated with little success. One interview was conducted for the Naugatuck case study community. Information on the social community, physical and economic community, company interaction with community

and future of the community is not summarized since only one interview was able to be conducted.

D. SCARLET, HARDEE DISTRICT, MINGO COUNTY, WEST VIRGINIA

Scarlet is comprised of a stretch of road along two forks of Trace Fork Branch in Mingo County. Scarlet road is easily accessed from Highway 119, or Corridor G; however, this road reportedly was

View Down Left Fork of Scarlet Road

not completed in this area as a major highway until the last 10 - 15 years. Over time, the area grew around a few families who settled the community. Interviewed residents report that the family relationships and closeness of the community is what they valued most about Scarlet above other places.

> "We had real tight neighbors… We watched out for each other.... It was just, I don't know, family. At one point in time we were crammed. Everybody was family."

An estimated 60 or 70 families lived in the hollow prior to the 1970s. The community was reported to have amenities such as an informal ballfield. Underground mining had been in the Scarlet community, at the head of the hollow, since the childhood of its residents. Its existence was part of the culture of the hollow. One resident described waiting, as a child, for the train conductor on the afternoon coal train to distribute candy to local children each day after school.

1. Social Community

Surface mining was reported to have begun in Scarlet in the early '70s. Scarlet reportedly remained a close-knit, family community through the 1970s and '80s as surface mining continued in the area; however, in the 1990s a drastic population drop reportedly had a significant impact on the social community as well as the physical community. Residents all reported a change in the social community following the purchase of many homes by the coal company and relocation of many families. Most of the residents indicated that the process engaged in by the coal company to purchase homes and land from families in the hollow caused rifts in the community and changed relationships beyond just a physical distance. It is difficult to measure social impacts; however, one resident described the process as "pitting neighbor against neighbor." Another resident elaborated on the problem of 'neighbor against neighbor' as follows:

> "Yeah, it really put a lot of strain on the community. Because everyone was afraid of. I don't know what they was afraid of. ….and then when they started talking about selling and it was like 'What are you getting?' And you'd get 1,000 phone calls and it's just like everyone was expecting to make $5.00 more dollars than the other. I mean that is just what I am saying. It just blowed the community up."

The resident goes on to explain how this affected their family personally....

> "Then my husband happened to get a job there. And so he got a job there when all this was going on, and it had nothing to do with what was going on. He had been trying for ten years to get a job with them..... As soon as my husband got the job, I was accused of, even at that meeting, they accused us of giving the first two pay days to 'em and $1,000 for the job. I mean, that's what I went through. That's how I was talked to by my neighbors, that I had lied to them. Right in front of everyone. And I just sat there, you know, I mean, because it wasn't true. I cried when I come home. You know, I thought how could these people treat me like that? Because if they had been offered the job, or could have gotten the job, would their husbands took it? Yes, they would've."

Despite the social implications of these changes and their affect on quality of life, not all the residents interviewed chose to leave Scarlet. Some did not leave because they were not able financially, and felt that the purchase offer made by the coal company was not sufficient. Others chose not to leave because Scarlet is their home, and despite the changes they had endured, they wanted to stay where they were. For those that left the reasons given were resoundingly concerned with the quality of life and the chance at a willing buyer for their properties.

<u>Sample Responses Taken from Several Different Interviews:</u>

Question: Why did you choose to stay?

Resident (A): "That was their attitude – 'Take it or nothing.' And it was nothing."

Question: Why did you choose to move?

Resident (B): "Primary reason for moving? They made us an offer we couldn't refuse."

Reside would was all Your was all your moved.

Abandoned Home in Scarlet

nt (C): " I say the houses cracked up. foundation cracked and friends had "

The homes in hollow, visual more five. were reporte number of now occupied Scarlet based upon survey, is no than twenty- Residents who interviewed d that some of the homes purchased by the coal mining company are now occupied as company-housing, others are people from within the community who were relocated into other homes on Scarlet Road. The second scenario was a point of contention for some of the residents.

Other homes that were purchased remain standing, empty and dilapidated. The abandoned homes serve as a visual reminder of the loss of the community.

> "Well, that is what I told them, when they started buying people out and they started moving off and the homes that are lived in that are falling in, is an example of what they did. Cause, they tore several down…. that is one thing that I did get done. I got a couple of them that were falling in; I did get those torn down. There was one beside my mom that was falling down and I finally got them to tear one down."

2. Physical and Economic Community

Reports of changes in the community during the presence of large-scale surface mining in Scarlet were fairly uniform from one interview to the next. Residents all reported significant amounts of dust hindering outdoor activities and in one case impacting respiratory related breathing problems. Blasting was listed as both a nuisance and in some cases believed to be above legal limits.

> "But it shook it hard because it threw me against the faucet there. I just walked in here and was getting some water, you know, and wham."

Well water problems were not reported in all cases, but one resident who remains in the hollow reports significant well water problems.

When queried about benefits received by the community from the presence of large-scale surface mining, some of residents did not see benefits to the immediate community of Scarlet, while others reported some benefits such as local employment. The reported levels of local employment varied. Underground mining had been reportedly the largest employer among the families in Scarlet. The underground mine closed in the late 1960s. One resident explained that the underground mine wound underneath the whole of the community, and therefore, it was understood that families which had settled the area would always be able to find jobs at that mine. One resident described the presence of surface mining as an employment benefit to the community as follows:

> "The younger generation, younger than myself and 'specific name'. I'd say they worked there when they was blasting, you know. That's the only thing I can see, you know, as far as a benefit. I think that's good that when people come in and brings work into our area that they hired locally. I can't say they didn't hire out of state, but I could see some of the local people getting in."

More than one specific instance of local residents seeking employment with the surface mining companies working in Scarlet and being turned down were recounted. The most stunning report indicated that local residents were told that jobs were for sale.

> "I went to a talk with the fella that was in charge of that. And he offered to sell me a job... A bribe... I was shocked. I was stunned. I really didn't catch it until the interview was over. And I was informed, 'Yes that is exactly what they are doing. Didn't you know it?' I said, "No, I did not know it."

Each of the residents interviewed reported that a few men had jobs with the surface mines at Scarlet, but that in a number of cases local men were believed to have been passed up for labor from other areas.

3. Companies and Communities

When discussing the interactions between the community and the coal company regarding the reported physical impacts, most residents reported mixed results. Those whom the coal company had successfully bought out were satisfied with the way the situation was handled by the company and their purchase prices. Concerning impact complaints, in some cases residents were satisfied, in other instances the same residents felt that their complaints were not addressed at all or fairly. Residents reported more than one company surface mined in the Scarlet area. Similar to the experiences of Werth, differences in companies and in management played an important part in the attitudes of residents toward their experiences and even jobs with the companies.

Scarlet residents also shared the feelings of the majority of Werth residents that public information regarding mining activity was not universally satisfactory, and the degree to which information was available varied by report. While the residents of Scarlet all reported seeing permit activity advertised in the local paper, they did not generally feel that these were legible or helpful to persons who may not be familiar with mining terminology or with the area. Some residents had attended community meetings with representatives from the State Department of Environmental Protection (DEP) and the mining companies. Others felt that they had never dealt directly with the mining companies regarding complaints or mining activity. Regardless of the levels of interaction, satisfaction was almost never reported.

Each of the interviews indicate that the coal company approached at least a portion of the community and made a blanket offer to purchase properties for the implied purpose of relief from the impacts of the surface mining in Scarlet. Details of the offer varied with regard to the base amounts offered, the numbers of families to which the offer was made, and the conditions associated with the offers. One resident reported that a condition of the sale of their property was that the family would agree to not relocate with the area of holdings of the company.

> "I mean, it says that you cannot, couldn't move within so many miles but you couldn't move back up that holler, Scarlet, at all. But then this area along, the four lane, you couldn't move there either they said. Just because maybe they thought they might have to buy them out if they continued stripping and…"

Several residents also indicated the following condition was attached to the sale of their property:

> "When they bought us out they said 'everything stays that's connected.' And we asked about the shrubbery, and like he said, he had his young fruit trees that he had planted that we could have picked up and moved.... But they wouldn't let us take anything that was connected to the home, tied into it like built-in cabinets....Six weeks later, somebody come along and collected them all and sold them."

Another condition, or detail of sale, for which reports differed was the option to repurchase land. Some residents had been told that following the conclusion of mining, they would have the option to repurchase, others were interested in this possibility and reported that "[the company] will not sell this land back for 200 years."

Another important variation between the residents' reports was their satisfaction with the company regarding purchase offers. Some felt they received a fair and satisfactory deal for the purchase of their property while others felt the offered purchase price was not enough to cover the purchase and move to a new home. Of those interviewed who chose to leave, nearly all were satisfied with the amount received. Relocation assistance in the amount of $5,000 was given to each of these residents in addition to the agreed upon purchase price.

4. Summary and Community Future

When queried about the quality of life in the community now, the majority of the residents were not positive. Those who had moved out, did not think they would move back for reasons including, lack of land made re-available to them, deterioration of community relationships and satisfaction with their current location. Those who remain are now facing the option of hooking onto a public water system. The residents interviewed who remain in the hollow were currently choosing not to hook-up

to the water system, but each for separate reasons. Reasons ranged from a sense of independence lost and defiance against the coal mining company for having negatively impacted their water supply, to a lack of current need. Hook up fees were reported at $500, in addition to the cost and labor of laying the connection pipes. This was deemed prohibitive by a number of residents.

The reported animosity between neighbors and family members is a striking difference between the experiences in Scarlet and those reported in other communities where a large-scale purchase of homes was undertaken by the coal company. Other communities reported anger and poor relationships with the coal company itself over perceived or actual differences in the details of the sale. One commonality expressed between the communities with similar buy-out experiences was the belief that relocation costs were often underestimated by those who chose to leave, and the suggestion that many families had gone into debt.

What remains constant among the Scarlet residents' comments are their expression of the overall decline in the quality of life directly related to the presence of surface mining and the loss of the community physically and socially, despite any benefits provided. Satisfaction of the residents with the purchase offers and the satisfaction to which complaints were addressed was inconsistent. For those who left, a similar notion was expressed many times:

> "I just feel that if they was doing it for one, they should have at least offered it back to me… Give me the option of whether I want to buy it back or not. They didn't. And, I feel that if they could have moved that double-wide out for one person, why couldn't they have moved it out for me."

E. CARCASSONNE, BLACKEY DIVISION, LETCHER COUNTY, WEST VIRGINIA

The community of Carcassone, KY, is located within the Elk Creek watershed area and is currently comprised of approximately 100 families, which includes those families living in the nearby area locally referred to as Jent Mountain. The Carcassone area of Letcher County has few significant employment centers and no large-scale infrastructure investments. Located approximately 4 miles south, Highway 7 is the closest primary roadway serving the Carcassone community and it provides indirect access to Whitesburg, which is the Letcher County seat and the area's largest economic center. Residents interviewed described the community as rural and remotely located from employment opportunities outside of the mining industry. The following excerpt from an interviewee relates this characterization of the Caracassone community.

Excerpt from Single Interview:

> **Resident:** And, my son, I have two sons. One is 25 and one is 20 and both my sons had to leave here to find work because they don't want to work in the mines or on a strip job, so they left here, so now I have to drive about 3 hours to see my grandchildren. They live in Georgetown. They moved there, you know, near Lexington, where there are better jobs. And, I don't work because where we live, basically the roads and stuff, and the community where we are in, it really it doesn't pay me to work. I wouldn't make enough money to drive that far. You know, we tried that and by the times the taxes come out and all that, it doesn't pay for me to work.
>
> **Interviewer:** Right, so you are in a very much a rural, Carcassone is a very rural community……can I say that?
>
> **Resident:** Very so, very much so, very much so. If it comes and snows, everybody here has 4-wheel drive. If you don't have 4-wheel drive, most of the winter, you are sitting. You cannot get out. And, even with 4-wheel drive, a lot of times it's hard.

1. Social Community

Like many Appalachian communities, the discussions with the interviewed residents evoked that the Carcassone population is close-knit and they value their sense of community and rural quality of life. One resident said that "you can trust your neighbors" and "you've got your neighbors to look out for you." The close-knit community perception was further stressed by the residents' statements indicating that they have resided in Carcassone for most, if not all, of their entire lives. When asked to describe the existing quality of life in Carcassone, one resident stated that Carcassone is a "quiet,

peaceful place. A good place to raise a family. We raised our children here and have some of our grandchildren here with us now, close to us."

The opinions of the interviewed residents' varied when queried about the impact of mining on Carcassone's social environment. Population declines, for example, were the most frequently cited social impact followed by the impacts on groundwater quantity and quality. Two interviewed residents specifically linked the loss of the area's population to the diminished groundwater supplies perceived to be caused by the mining operations. "I would say [Carcassone's population] has decreased because when they stripped most of the land here, it is harder to find good water now than what it was 25 to 30 years ago." The second resident shared the following sentiment regarding the population losses.

Excerpt from Single Interview:

> **Interviewer:** And do you have any reasoning or any idea why that population has decreased?
>
> **Resident:** Well, the main thing is because of water. The difficulty in finding suitable water for families.
>
> The mining operations' impact on local groundwater water supplies and quality were resounded by another interviewed resident. The resident perceived that the local water supply and quality has been negatively impacted by the local mining operations.

Excerpt from Single Interview:

> **Resident:** They were mining and stripping and we used to have really good well water. Our well is only like 65 feet down, something like that, and um, it just all of a sudden became real orange and nasty and you couldn't stand turning it on because it smelled and we finally contacted the coal company and uh they came and took samples and put a filter in for us.

Another interviewed resident, however, believed that the population declines were not caused by the mining operations, but rather were the result of the lack of skilled employment opportunities.

Excerpt from Single Interview:

> **Interviewer:** The question is, what……was the community impacted by change in population or shift in local demographics, we'll say again between the period of 1980 to the current to the present day.
>
> **Resident:** Uh, I don't know back then when I was growing up, it seemed like there was more people here.
>
> **Interviewer:** And, if you perceived that there were more people, do you have any reason or uh, rephrase this correctly. Any perception of why the population may have declined?
>
> **Resident:** Pretty much because once the kids grew up, there weren't nothing here to keep them. You know, jobs were, jobs still are, if you don't have a college education, you know, you either work in a fast food restaurant or you are working on a strip job and our kids have to get jobs or go off to school.

No other specific impacts to the community's social environment were reported by the interviewed residents; however, when queried about changes in their community, one resident found it disheartening that the area's scenic beauty has been destroyed. "……the mountains are gone, history's gone, uh, you see forever, used to be you would look out your window, you'd see forever the mountains. You know, I think that's the future you got there and you can see the mountains all the way in Virginia and Tennessee, you know, because you're up so high and [the mountains] are all gone."

2. Physical and Economic Community

As previously discussed, the most significant physical impact resulting from the mining operations as perceived by the interviewed residents is the diminished quantity and quality of the community's groundwater supplies.

When further queried about additional impacts on quality of life issues, two interviewed residents cited blasting as being a common problem among the area residents. According to one interviewed resident, "We had things knocked off the wall and broken foundations, concrete blocks, it was cracked and this area, several [families] have had that."

Opinions differed among the interviewed residents regarding the economic benefits of the mining operations. One interviewed resident suggested that the employment opportunities afforded by the mining companies were beneficial. "The mine company is what gives me my bread and butter. It's what gave me the house I'm living in." Others, however, suggested that the local economy is too dependent on the mining operations and few, if any, alternative employment opportunities offering competitive wages exist within the Carcassone community.

Excerpt from Single Interview:

> **Interviewer:** I was just gonna ask is any of that related to employment opportunities in your area? What is the major employer for the Carcassone area for the residents that live there.

Resident: Right now I would say it is geared to the mining business other than, well we have a lot of teachers, doctors, things like that lives in this area now.

Interviewer: And where do those teachers and doctors work? What is the local area that they work in or maybe facilities that they worked out of, where are they located?

Resident: Well, I have a daughter and a son that are RNs and they both work in medical facilities in Perry County.

A common thread among the interviews is that the Carcassone community's basic economy appears to be highly dependent on the mining industry and alternative skilled and competitively waged employment opportunities are lacking. This statement is clearly articulated in one resident's response——"Well, if it wasn't for the mine, then what would our people be doing for money? Because we don't have nothing else here." As a result of this one industry economy, the community is experiencing a loss of its young adult populations who have obtained college-level educations and moved elsewhere for employment opportunities. It is therefore possible that this trend has produced a negative impact on the community's quality of life and has, in part, dampened Carcassone's ability to sustain its existing population.

3. Companies and Communities

Although there is indication that the mining companies approached at least a portion of the community regarding their operations, the interviewed residents, overall, seemed pessimistic about the level of contact the mining companies had with the local residents. In most cases, the mining operations limited their public involvement efforts to the pre-mining inspections and publishing of the mine permits in the local newspapers; often not seen or understood by the local residents. The following interview excerpts support this issue.

Excerpt from Single Interview:

Resident: Now, not until, probably, uh, I would say a couple of years ago, I got a letter in the mail, it was certified mail, they sent me a letter and said that they were going to be mining within ½½ mile of my house and it, you know, it told about the blast signals and, you know, all that. Other than that, no, you don't hear anything.

Interviewer: So, beyond that initial contact, you can answer yes or no, if you wish, did the surface mining company continue any contact with you or your neighbors beyond that initial contact?

Resident: No.

Excerpt from Single Interview:

"If I didn't read the paper, I didn't know about it. Uh, it was put in the local news in Malmego and uh if you can read that, you know they give notice in there and then sometimes it would be word-of-mouth."

4. Summary and Community Future

The resident's overall sentiment towards the presence of the mining operations in their community was mixed. On one hand, the residents felt that the mining operations were beneficial because they provided employment opportunities. But on the other hand, they felt that the employment opportunities offered are limited and that the local economy is too dependent on this one industry. To this end, it can be concluded that the future of the Carcassone community is questionable given that the area's population is decreasing. Moreover, the quality of life for those who wish to remain in Carcassone despite these odds will be jeopardized once the mining operation is over. As one interviewed resident stated, "you never know from one day to the next what your quality of life's gonna be because basically, if your husband or if you or any of your family members work in the coal business, you don't know one day from the next if you've got a job……."

F. SUPERIOR BOTTOM, WEST VIRGINIA

This community was not selected as a case study community, but was selected for collection of additional narratives. Superior Bottom is exactly that, a bottom of flat land adjacent to the larger community of Omar. Both are a short drive south of Logan. Both communities are traditionally racially integrated, which is a noteworthy characteristic. It was considered a thriving area during the first half of the twentieth century. Residents described local schools, a theater, businesses and a clubhouse in Omar. Underground mining was described as the largest employer, but there was also a mix of employment. Teaching was cited as an example of employment. Superior Bottom was described as a community consisting of a bottomland area full of homes, as well as several rows of homes on the opposite hillside. The decline of the mining industry in the later half of the century contributed to a loss in population that ultimately closed the local elementary school in the bottom. Also, as a result some homes were torn down at this point; however, the community remained largely intact and stable based on these reports. Surface mining began adjacent to Superior Bottom in the middle 1980s and continued into the 1990s.

1. Social Community

Superior Bottom residents reported very few changes in the population until the coal company began to purchase homes and/or properties in the community. With the decline in population, fewer than ten homes remain in the community, a community that was described as having closer to 30 to 40 homes at one time. One resident stated that the only negative change from the presence of surface mining was, "losing my neighbors, and losing the children." Despite these changes, residents did not feel that their quality of life had been significantly impacted. In fact, in contrast to the experiences of other communities, Superior Bottom residents noted that the close knit aspect of the community still remains and the community organization still remains, and is perhaps only diminished.

Only one of the residents had interacted with the coal company regarding purchase of their property.

This family described their experiences dealing with the company as extremely honest, responsive and helpful. This in turn, also shaped their decision to sell. One resident describes the close and trustworthy relationship they had developed with the coal company agent as follows:

> "I've been satisfied... And so I been very, you know, agreeable with him, because he's doing everything, you know, to try to please us... But he's not pushy he won't, wouldn't try to get me to change my mind. He would ask me questions, you know, make sure... And he said, I want the same things for her that I want for my mother... and I just thank God that he's like that."

Some residents did not move during this time despite impacts, due to age, ties to the area and general affinity for the location.

> "I just grew-up here...I'm 62 years old and so I really don't' feel like going anywhere else."

None of the residents expressed anything more than sadness over the loss of their neighbors. For the family who was relocated, the company relocated them within the same community. This was not necessarily reported to be the case for any other residents who were relocated.

2. Physical and Economic Community

Residents reported few physical changes to the community within the study period. Landscape changes and presence of blasting and dust were cited as the only physical impacts present in the community. Changes in landscape included both changes to surface mined land and the physical removal of many homes, leaving the bottomland much less densely occupied. The change in housing density and increased peacefulness was noted as a benefit, because it increased the presence of wildlife "coming down out of the mountain."

Residents described impacts from dust as hindering quality of life.

> "Basically couldn't sit on your porch. Couldn't have your doors open or anything else."

Also reported was blasting without any audible warnings. The community has been on public water for many decades and reported no problems with this system.

Residents cited employment as a benefit to the community stating,

> "As far as jobs, yeah. It helped out fine, but as far as environmental it wasn't too good at all."

However, residents could not recall anyone specifically in Superior Bottom who had worked in the surface mining, but several men in the larger Omar area. It was noted that fewer families were of

employment age and "most of old-timers had retired."

3. Companies and Communities

When asked about their feelings of likelihood that the company will be responsive in dealing with the community in the future the resident's responses were split. One resident felt that the company had been more than accommodating, honest and responsive in their dealings. Another resident was not clear on this issue. On the one hand, the resident felt that little had come of past efforts, but also felt they believed if they decided to leave the bottom, the company would deal fairly with them.

It is particularly noteworthy that residents of Superior Bottom reported that the community was organized and had worked in the past with the State Department of Environmental Protection to address concerns about dust and overall mining activity. This organization, however, was unable to stave off the displacement that occurred.

The most recent significant decline in population in Superior Bottom did not occur until the coal company approached residents requesting to buy their lands for a haul road and for equipment storage. It was noted that the community opposed this and held public meetings with DEP representatives. However, they were unsuccessful in their opposition. Reports indicate that the company did not approach everyone, just a specific portion of homes from the bridge that provides access to the bottom and north. As stated above, the opinions of the residents interviewed varied regarding access to public information and the cooperation of the coal companies with the community.

4. Summary and Community Future

As for future of the community the residents again were split. One resident looked upon the changes as a cycle of regeneration that would depend largely upon the efforts of those that remain in the community now. Another resident did not express much optimism that things would improve.

> "If the situation doesn't get any worse than it is now, then I am satisfied."

One resident explained their hope for the resilience of the community, regardless of any mining activity in the future, as follows:

> "You know, I saw some disappointment, but it's… they're coming back. Everyone is they're trying now to do and keep things going. One of the things I told them too, I said, well, you know, people were coming in and trashing the community. And I told them, No, we have a community action group, that we were trying to improve our community. And as long as we have one person living in that community, and this is…. is ah going on, we expect the community to be decent. And able for people to live in and clean enough for someone to come in and want to live in. To want to live in it. So, that is what we are trying to do."

Also stated was a fear that if mining companies continue to surface mine above Superior Bottom, then "a lot of water would be coming out of there" at which point they might reconsider decisions to stay.

G. BLAIR, WEST VIRGINIA

Blair is a community west of Logan which at it's height was reportedly home to approximately 700 families. The community was linked internally and with adjacent communities by the local school and churches. Residents reported that their families originally settled in the community in the first half of twentieth century and have continued to live there since that time. Strip mining reportedly occurred in the Blair area in the 1970s, and mountaintop mining reportedly began in the early to mid 1990s.

1. Social Community

Residents described a number of aspects that made Blair a likeable and prosperous place to live. The family atmosphere, quiet environment, local sports teams (baseball and softball) and good people were cited as reasons for liking and enjoying living in Blair over the years. At one time Blair was home to several local stores, filling stations, and numerous churches. Residents say they must now drive to Logan "to buy a loaf of bread."

Empty Lots in Blair

Based upon the interviews collected, it is not clear exactly when a shift from a population of 700 families to 300 happened; however, accounts indicated that when mountaintop mining began in the Blair area only about 300 families remained in the area. One possible explanation might be an

overall decline in the mining industry and its related employment in the 1980s; however, this was not clarified by the residents. In the mid 1990s residents report that the mining company in the area, believed to be Arch Mineral, purchased more than half the homes in the community. A loss of jobs related to mine closures was also reported to have contributed to the population decline. The closure of two local schools in Blair and Sharples, along with the loss over time of local businesses contributed to a decline in the social community described by one resident as follows:

> "When you loose your schools in a community, you have no reason to have a community... Families… in this community, in Sharples, when the children done something, mommies and daddies was there. When they played ball mommies and daddies was there. When they had Halloween parties, mommies and daddies was there. When they had any kind of a get together, mommies and daddies was there."

Of the interviewed residents, one family chose to leave and the other family chose to stay in Blair. Residents reported no animosity between neighbors or impacts on relationships related to decisions to stay or leave. Neither resident had any regrets regarding their decisions. The residents described their decisions as follows:

Excerpts Taken From Two Different Interviews

Decision To Remain In the Community: Resident (E)

Interviewer: Can you tell me a little bit about your decision not to move?

Resident: Well I didn't want to! I like this place, and I was born and raised here. I'm not saying I won't go. It may get so bad I might have to, but I don't want to. I don't believe I'd be satisfied anywhere else. I've looked around, looked at property and it's outrageous. I said if I had to go, I said they're gonna buy me a place. I'm not gonna go in debt. This is paid for - I don't owe a dime on it. I own this place and that place up there, those hills. If I go somewhere, their gonna buy me a place. I'm not gonna go in debt. So I don't know. I'm not gonna say I wont go, but I don't want to.

Decision To Leave The Community: Resident (F)

Interviewer: Why did you approach the company to be bought out?...

Resident: I knew that they would strip behind my house. I, my son knew how far they was gonna go, and any time you got strip mining you got a chance of a slide, especially in the spring. Here when we have a lot of rain, we have deep water, nothing to hold it back, so I felt that it was time. If I could, it was time for me to move out.

Residents reported an estimate of 65 families that "still own their own properties" in Blair. There were no visible, abandoned or dilapidated homes, only a very few boarded-up businesses. Despite the continuing "lived-in" appearance of the community, one resident reported problems with residents from other areas dumping trash in and around the community. This type of problem has social, physical and economic impacts on residents over time, impacts most often cited in urban

areas where dilapidation and illegal dumping on abandoned lots can be a rampant problem.

2. Physical and Economic Community

Several types of physical changes were reported by both families interviewed for Blair including changes to landscape, wildlife habitat and air quality. One family reported damage to water quality.

In Blair, one resident reported complaints regarding on-going dust problems and well water problems having been ignored or not taken seriously by appropriate authorities. Well water was reported to be no longer potable and residents travel to springs outside the community to collect potable water for daily use. As mentioned previously, only a small number of interviews were collected in Blair, therefore, it is difficult to gage the prevalence of reported positive or negative impacts. Despite this it should be noted that reports of extensive dust from surface mining facilities and blasting techniques have been consistently raised in each of the communities, except Werth.

As in many communities in West Virginia, underground mining was both a predominate part of life in Blair and a major employer through the twentieth century. One resident explained that they had worked a number of jobs in retail and other industries, but eventually worked at the coal tipple because mining had the best wages. Residents referred to employment when asked about benefits from the presence of surface mining in the Blair area.

> "I raised three children on the miner's income....It's the best paying job in West Virginia, far as I know, is coal mining."

Each of the residents felt that the jobs generated, not only by the coal industry, but by large surface mining operations was an important benefit. Both families interviewed had been supported by the coal mining industry, as were subsequent generations in one case. One resident clearly pointed out that he relies upon the benefits and retirement he receives now that his employment is finished. However, the residents were not always consistent in their own testimonies regarding employment provided locally to Blair from adjacent mining versus overall employment benefits in the region.

Another theme which has been raised in interviews in several communities and repeated again in Blair, was the difficulty in obtaining employment with coal companies and the need for a connection or someone advocating for you to be hired.

Excerpts from two different interviews below illustrate that point.

Resident (G) "Coal is a good occupation. It is kind of dangerous, but it pays good wages.... if you can get a job. I tried to get a job down at Sharpless for probably about twelve years before I even got on down there... It is hard to get on, you have got to have somebody to pull for you."

Resident (H) "My dad's a coal miner and he was in the coal mines for I think 35 years. So he help get me in the coal mine."

3. Coal Companies and Communities

The relationship between a given coal company and the community in Blair was not significantly remarked upon by residents outside of the process through which a coal company purchased properties and displaced a number of families. Complaints regarding any impacts were directed to State officials and the relationship with the state was remarked upon as negative. Remarks regarding a coal company's direct dealings with the community indicated that those who had interacted with the company felt they were treated fairly.

In reaction to some of the physical changes, residents reported having filed complaints and spoken to the Department of Environmental Protection (DEP) and gotten less than satisfactory results. It was believed that inspectors were bought off, that residents were put off and their complaints were disregarded. One resident described the following interaction regarding his well water:

> "I took three samples to a meeting we had down at the school about our water. I took one over the weekend you know when they wasn't doing no blasting, and it looked fairly good. And I took one after they started blasting, and I showed it to 'em. And they didn't think what I was showing them was actual truth. They made fun of me, really, and I got it right of my spigot."

Residents indicated that the coal company generally did not interact with the community on a proactive basis. Public meetings were held with DEP representatives, but none of the residents reported having been informed prior to mining of possible impacts or activity. In general, knowledge of mining activities was gained through personal contacts and involvement with the mining companies.

> "They don't tell you anything. That is one problem that the community has, is they don't let the community know what they're going to do. If they had come in here and told the community what they were going to do, there might have been more people who would have sold out. I don't' know."

The residents did not consistently report seeing the permit activity advertised in the local papers. However, one resident reported, that for the advertised permits they did read, they felt that most people would not understand the information due to lack of technical knowledge in reading the maps.

Residents also alerted State officials of a trash dumping problem in their community; the problem began following the decline in population and removal of many homes.

> "They had come to the conclusion that ain't nobody around here, so why don't we make a garbage dump out of this place."

Again, the resident had complained to the DEP and felt the issue was not resolved satisfactorily.

Residents were asked about the interactions regarding coal company or land holding company purchasing of homes. One resident reported that individuals approached the coal company in most cases, seeking to leave the perceived negative impacts of surface mining (dust, decreased property values and possible flooding were noted) and to take advantage of a willing buyer. Buy-outs were reported to have begun in the middle 1990s and one resident believed that the company was interested in purchasing about 200 properties at that time. For those who had chosen to leave, they did not report this as a difficult decision. They felt the company gave them a satisfactory purchase price. When queried about any additional conditions of the sale, one resident stated the following:

> "Yeah, I had to move, I had to move out of what the company owned. At that time it was below Sharpless... I can't recall exactly the boundary line, but I couldn't move back in the neighborhood I was in. Or Sharpless, the neighborhood where the headquarters of the company was at, or their main office. I had to move outside of that."

Another resident who had chosen to stay stated the following about the dealings between the residents and the company:

> "They would think they were getting a good price for their house, because when they bought the house they didn't pay a whole lot for it. But then when they would try to buy one somewhere else, they would usually have to go in debt, most of them."

4. Summary and Community Future

While surface mining is not going on currently adjacent to the community, the period of mining and shifts in population are still somewhat recent. Residents indicated that current quality of life is diminished from the loss of population and they worry about possible future flooding. When queried about the community environment, one resident responded:

> "I can't say that it is a bad community, but there just not that many of us... There is just nothing to get us together."

The residents were not optimistic in regard to the future of Blair. They believe that the coal company eventually might buy out the whole community based on indications of possible surface mining activity in the future. One resident simply stated that there was no future for the community.

> "I believe [Blair] will finally vanish. It won't be any, if the coal company has anything to do with it. See they're wanting to go underneath us and get coal, they want the long wall.... Well they want to get us out of here, because if our property sinks, they know we're gonna sue. 'Course it's hard to get anything out of 'em. But ah they'll eventually, I'd say, get us all."

VI. PROPERTY OWNERSHIP DATA

In *Who Owns Appalachia?* Charles C.Geisler and the Appalachian Land Ownership Task Force undertook the task of identifying land ownership patterns, examining associated tax burden issues and discussing the economic and social implications of land ownership patterns nationally. The findings if the report were based on county tax data from eighty counties in six states, Alabama, Kentucky, North Carolina, Tennessee, Virginia, and West Virginia. The Task Force report indicates that land ownership patterns, particularly patterns related to energy production and reserves have far reaching implications ranging from national energy policies to local economic development. The implications of absentee ownership and the scale of ownership of energy related lands in Appalachia is not a new issue, but very little specific information has been made available to document this issue.

The Task Force generally found that use of the land for coal mining and property ownership by distant corporations contributes to patterns of depressed tax bases and loss of agricultural lands. Lands used for coal mining, particularly strip mining, 'may limit the use of land for subsequent agricultural development,' and a lack of improvements or taxable investments in these lands result in large parcels of land which do not contribute to the tax base.

From the data collected by the Task Force, which echo the data found in other studies reviewed in the report, two themes emerge with regard to property ownership in Appalachia: (1) absentee ownership of surface rights is disproportionately high and (2) this ownership is becoming increasingly divorced from the local economy and society.

1. Absentee Ownership

Findings of the Task Force indicate that as of 1981, 13 million acres, (nearly 75 percent) of the area studied was held by absentee owners. Out-of-state ownership accounted for 47 percent, and out-of-county ownership accounted for an additional 25 percent. More specifically corporations own 40 percent of the land in the sample across six states. In West Virginia, that number is even greater; corporate ownership accounts for 59 percent of the sampled area. To further illustrate the point that a small number of large-scale owners control a large percentage of the land in Appalachia, the Task Force analyzed the concentration of ownership as well. At the time of the study, "The top one percent of the owners in the sample own 44 percent of the land in the sample...[and] the top half of the owners in the sample control 94 percent of the land in the sample." Of the fifty top owners in the sample, forty-six were corporations. (Appalachian Land Ownership Task Force, 1981)

The pervasiveness of large-scale absentee ownership, especially in West Virginia, has important and dangerous implications for local economies and social environments. Both social scientists and the Governor's Task Force use the term "colonial" or refer to a "colony" as an analogy for the social and economic structure present in Appalachia with regard to land and power. Land ownership has long been recognized as a tool for wielding power and gaining political control. For example, in a colonial setting, ownership of land means control over geographic resources and power in shaping economic development. Social theorists examining patterns of underdevelopment and poverty have applied a number of theories to causes of economic failings. The colonialism thread within those

theories maintains that underdeveloped economies are shaped by their dependency upon more powerful economies and their development possibilities are controlled by absent decision-makers acting on foreign interests (Obermiller and Philliber 1994). Geisler and the Task Force quote Wunderlich, a land economist for the United States Department of Agriculture, as stating the relationship between land ownership and power as follows: "Land is a means for distributing and exercising power," (1981). The link between these ideas lies in who is controlling the power, (i.e. the land). In the case of Appalachia, the Task Force's report illustrates that it is largely not Appalachians.

> "There was nothing here. So, you can't turn up your nose at industry coming in. You've got to have something, and you want to have something that will keep young people in this area, very much. But we are very disturbed at the lack of control.(Freda Silver)" (Moore 1988)

2. Stewardship Of The Land

In addition to demonstrating who owns the majority of the land, the report also discusses the extent of corporate and non-local ownership. The separation of ownership between surface and sub-surface mineral rights is a pervasive practice in the coal fields of Appalachia and elsewhere. The resulting pattern of separation between those that occupy the land and those who control its wealth and its resources creates a distinctly unique question regarding stewardship. As in the colonial model of social theory, the decisions of absentee owners will be in their interests, not necessarily in the interests of or accounting for the interests of those who occupy the land.

The increase of surface mining and absentee ownership of surface rights creates additional issues of stewardship. The Appalachian Land Ownership Task Force report illustrates that the nature of absentee ownership in Appalachia has been changing since the 1960s. Since that time, large multi-national energy conglomerates have been acquiring and combining the interests of, smaller coal companies. While at one time the coal mining industry was focused around a local town, epitomized in the company towns throughout the region, now a local operation may ultimately be controlled by an operation thousands of miles away.

> "Allied Chemical Corporation's mineral holdings in Fayette and McDowell counties, West Virginia, have been absorbed into the larger holdings of Armco Steel and A..T. Massey" (a subsidiary of St. Joe's Minerals of New York, now in association with Royal Dutch Shell). (1981)

The implications of increasingly international forces shaping land use and economic decisions in the Appalachian region are an increased divorce between those who control and have responsibilities for stewardship of the land and those who occupy and live in proximity to those lands.

Several of the residents interviewed referred to the local mining operations and the series of companies owning the land. The residents demonstrated understanding of these ownership patterns and the shift from local companies to large multi-national interests with a depth that is likely

uncharacteristic of the average American's understanding of land in their communities. In a region centered so heavily around the energy resource economy, understanding the complex nature of the ownership patterns has become a prerequisite to living in their own community, in a manner that likely few other communities in the country are required to do.

The property ownership data collected for this study illustrate on a much smaller scale, the patterns of land ownership within the selected community study areas. The findings are discussed with regard to the displacement of local populations and the increasing separation of local power and control over the communities in which they live.

A. WERTH, HAMILTON SUBDIVISION, NICHOLAS COUNTY, WEST VIRGINIA

No pattern of company ownership or purchase of privately held properties in Werth was indicated in the sample of property ownership data. Some residents reported selling land to the coal companies for mining, but the sample property ownership records support the assertion that there was no pattern of purchasing homes or buying-out communities large-scale in the Werth area. Sample data are shown in Table 21.

B. KYLE, NORTH ELKIN SUBDIVISION, MCDOWELL COUNTY, WEST VIRGINIA

A sample of property ownership data for Kyle, WV does not display a pattern of large-scale purchase of properties by extraction or land holding companies. These data are shown in Table 22. Interviews have not yet been conducted with residents of Kyle; therefore, no determination can be made if these data support the experiences of residents in the community.

C. NAUGATUCK, HARDEE DISTRICT, MINGO COUNTY, WEST VIRGINIA

Sample property ownership data for Naugatuck, West Virginia are shown in Table 23. The collected data do not display a pattern of large-scale purchase of properties by extraction or land holding companies. Two properties within the sample of 25 have been purchased by a land holding company from private owners within the last five years. No data are available from existing property tax records concerning purchase price.

D. SCARLET, HARDEE DISTRICT, MINGO COUNTY, WEST VIRGINIA

Table 24 shows recent property ownership patterns in Scarlet, West Virginia. Community interviews and the sample property ownership data both indicate a pattern of large-scale property

purchases by the coal company(s) or an agent. Within the sample of 25 properties collected, 76 percent have been purchased from private owners by a land holding company. All of these purchases occurred within the last ten years which is consistent with the time frame described by residents. Previous purchase prices were not available from existing property tax records for the majority of the 76 percent now owned by land holding companies. However, data were available for three properties showing that the recorded sales price was more than double the last recorded sales price. In two instances the sales price increased by 580 and 670 percent respectively over the previous sales price in less than ten years. While a sample of three sales prices may not be representative of all such transactions, it does support indications of satisfaction in purchase price reported by some residents. None of the sales prices were compared to advertised sales prices for comparable properties to determine the relative value compared to available properties; therefore, no comment can be made on the ability of Scarlet home owners receiving the listed prices to purchase a new home in another community.

E. CARCASSONNE, BLACKEY SUBDIVISION, LETCHER COUNTY, KENTUCKY

There is no evidence of large-scale purchase of private property by extraction or land holding companies based upon the sample property ownership data in Carcassonne, KY. These sample data are shown in Table 25. Community interviews have not yet been conducted in this community; therefore, it is not possible at this time to compare these data with the experiences of residents.

F. ADDITIONAL COMMUNITIES

1. Superior Bottom, West Virginia

Of the same property ownership data for Superior Bottom, WV, 52 percent of properties have shifted from private ownership to that of land holding companies. Table 26 shows that none of the properties purchased are larger than one acre in size. These data support statements by residents in the community that roughly half of the valley bottom has been purchased by coal company interests. Residents reported, from first-hand experiences, satisfaction with purchase prices offered and settled upon with the coal company. Sale prices were not recorded for any of the properties within that 52 percent of the sample data.

2. Blair, West Virginia

Property ownership data were collected for the Blair, WV area; however, available records did not provide complete transfer of ownership information. As shown in Table 27, records for current ownership for one property and several records for previous ownership were also not available for the sample properties. Over half of the properties within the sample are currently owned by either extraction or land holding companies. Where data are available, 68 percent of the land owned by either extraction or land holding companies was purchased from private owners. Only two of the properties purchased by either extraction or land holding companies were larger than one acre, those were 10 and 11 acres respectively.

Residents interviewed in the Blair community who had chosen to sell their property to the coal company or their agent(s) were satisfied with the settled upon purchase price. The sample property ownership data indicate for two properties the sale price for transfers from private property to coal company interests. For these two properties the purchase price increased, by 176 percent and by 700 percent respectively within a fifteen year period.

VII. SCHOOL ENROLLMENT DATA

A. WEST VIRGINIA

School enrollment data collected state-wide by district are available in West Virginia beginning in 1977. Each county in West Virginia is its own school district. Presented in Table 28 are the total enrollments from 1977 - 1979 and in 5 year increments following that to 1999 for each of the school districts in the West Virginia study areas.

The overall trend of total enrollment is consistently declining since the first half of the 1980s among each of the West Virginia study areas as well as the control area. The McDowell County school District shows the greatest overall decline in total enrollments. It is important to note that the control area, Wyoming County School District, has similar drops in total enrollment over the study period despite its lack of significant surface mining activity.

B. KENTUCKY

School enrollment data for Letcher County, Kentucky are shown in Table 29 for the study period, with data missing only for the school year period of 1993-1994. Total enrollment data for the Letcher County School District, which encompasses the county in its entirety, indicate the largest decline in enrollments during the post-mining period, 1991 - 2000. Prior to the 1990 - 1991 school year, average five year enrollments only fluctuated by 100 -200 students. Between the 1989 - 1990 and 1999 - 2000 school years total enrollment dropped by 1, 228 students.

Enrollment from 1970 to 1985 for the local elementary schools serving the Carcassone area, Letcher and Campbell's Branch Elementary Schools, are shown in Table 30. Total enrollment over the 15

year period increased at both schools. The range of total enrollment over 15 years for Letcher Elementary was +/- 131 students, and the range for Campbell's Branch Elementary was +/- 37 students. A comparison of the pre-mining period, 1970 to 1979, to the first half of the during-mining period, 1980 - 1985, shows the five year average enrollments continuing to increase.

Anecdotal accounts indicate that the Letcher County school district is currently planning on consolidating all the students in the county into one high school. Enrollment data by school indicate that the local Carcassonne School closed in at the end of the 1973-1974 school year with a total enrollment of 12 students. Elementary schools which served the Carcassone/Blackey/Letcher areas were consolidated in the late 1990s. Parents and area residents at these meetings expressed concern over the loss of their local school and the impacts to the quality of education associated with increased students at Letcher Elementary School.

VIII. SUMMARY DISCUSSION

A. COMMON THEMES

Among the residents in each of the communities several themes emerged in describing their experiences living in a community adjacent to large-scale surface mining. Demographic data support many of these themes such as loss of population, declining economic environments and aging populations. The experiences shared by residents include loss of community population and community structure, struggles in obtaining available economic benefits, occurrences of similar physical changes and feelings of ineffectiveness in preventing or managing these effects. Additional common experiences shared among the study communities related to the purchase of homes and property by extraction or land holding companies and the resulting impacts of displacement.

1. Social Community

The census data demographic analysis presented in Section IV demonstrates that an overall decline in population was experienced between 1980 and 2000 in the five case study areas and one control area. While this is not shown to be consistent with the population growth rates of the respective States, West Virginia and Kentucky, it is consistent with anecdotal and economic indicators regarding employment trends within the coal mining industry. The population trends of the control study area, District One, Wyoming County, West Virginia are somewhat consistent with that of McDowell and Mingo Counties, showing a significantly higher rate of decline between 1980 and 1990 than between 1990 and 2000. Therefore, while the rate of loss of population is greater in the during mining period, it is also greater in the control study area suggesting that the presence of large-scale surface mining did not contribute to population decline.

It cannot be assumed that each of these communities was necessarily at its social and economic height at the point at which surface mining began. While no single population shift of the scale associated with the purchase of whole portions of communities were reported, several residents did reported declines in local population over time.

In each of the communities, residents noted the decline in population, but not every resident felt that this decline represented a decline in the community. However, several indications support reports of less stable communities and loss of community resources. A number of residents reported that large-scale purchasing of homes and land by the coal companies and their agents contributed to a less stable community. Property ownership data collected in Scarlet, Superior Bottom and Blair reflect these reported large-scale purchasing patterns. In each of these communities, between 44 - 76 percent of sample properties had been purchased by either a mineral extraction company or a land holding company.

2. Displacement

Traditional discourse regarding displacement of persons and families most often occurs around gentrification and urban displacement of a population by either market forces or public policy around revitalization. In recent decades, a great deal of attention has been paid to this issue; however, the possible displacement of rural populations or displacement caused by a single industry/company has not typically been a focus of the discussion. Displacement could be generally defined as the involuntary movement of a population, whether by natural disaster or market forces. One source expands this definition to include any household forced to move despite "having met all previously-imposed conditions of occupancy" or because of conditions that make occupancy "impossible, hazardous or unaffordable" (Schill and Nathan, 1983). Much research indicates that poor, minority and elderly populations bear the brunt of urban displacement, and in fact that the elderly may share an even larger percentage of that burden (Palen and London, 1984) (Schill and Nathan, 1983). As discussed in Section IV, demographic analysis of the study area counties and county subdivisions indicate that between the 1990 and 2000 U.S. Censuses the mature age group (ages 45-64) and the senior age group (ages 65 and older) are increasingly occupying a larger percentage of the total population. This trend is also noted at the state level.

The coverage in the literature of the specific issue of a private company undertaking a large-scale plan for purchasing and moving populations in rural areas is sparse. To characterize this process as strictly displacement could be considered questionable on the grounds that residents are given the option to move or not to move; however, it should be noted that residents of in Scarlet, Blair and Superior Bottom reported feeling pressured to leave. None of the interviewed residents in those three communities, whether they stayed or left, indicated that they were interested in leaving prior to the presence of surface mining or the relocation of the majority of their neighbors. Similarly, for those who left their communities and some who would have chosen to leave, the quality of life impacts and/or the opportunity presented by the coal company for a willing seller were nearly always given as a primary motivation for relocating. Almost all residents interviewed expressed a fear of possible future physical impacts and concern regarding the likelihood of flooding. Several of these residents felt that the mining companies presented the only likely opportunity for an interested purchaser at that time. Many residents may have felt that their options were limited, "In West Virginia, the coal company is the power... And the little man don't have a chance. They decide they want a piece of property their gonna get it" (Blair, WV). In this instance, the perceived power of the coal company is believed to be larger than the person, family or community, and it is out of their control or ability to fight.

The social and psychological effects of displacement are difficult to measure, and are not measured by census data alone. Literature sources indicate that displaced populations face personal hardships finding replacement housing, undergoing separation from family and community networks, and feeling powerless or ineffective (Schill and Nathan, 1983). In urban environments, displaced populations from public projects receive relocation assistance in recognition of the difficulties associated with finding affordable replacement housing. Available affordable housing in Appalachia is stymied by topography, land ownership patterns and a resulting tight and inflated market (Appalachian Land Ownership Task Force, 1981). Compounding physical obstacles are the social and psychological impacts associated with displacement.

There are many parallels between the experiences of a displaced community and other groups who have been forced to migrate and relocate, specifically with regard to loss of community and a sense of personal history. In Harriette Arnow's mid 20th Century book, *The Dollmaker*, she chronicles the trials of a family forced to move from Kentucky to Detroit in search of work. Her characterization of their displacement, while fictional, highlights some of the issues raised in the interviews collected for this report, most notably the associations of a home place to a family and personal history and culture (Rubin1998). This same sense of belonging to a culture and history tied to a geographic place is present in literature regarding the displacement of Native American Indians. In a Native American framework, Federal policies for assimilation included a movement toward individual ownership of land and therefore a purposeful disruption of traditional communally held land in order to engender concepts of "competitive individualism" over a communal culture and history (Berninghausen 1998). Such policies recognized that within that culture, primary ties to the land were not economic in nature.

Parallels can also be drawn between the memoirs of past Kentucky resident, Linda Scott DeRosier, and the manner in which the majority of residents interviewed for this report referred to their communities and the close-knit relationships developed between neighbors that were not physically related.

> "We watched out for each other. We was at the mouth of the hollow. It was just, I don't know, family. At one point in time it was family. Everybody was family. And then, of course, you start letting in, and people kept selling out, and of course, we all bonded, even the people that came in that wasn't family, we all bonded real good." (Scarlet, WV)

From Linda Scott DeRosier's memoirs:

> "I also know that Daddy's and Ronalta Mae's daddy Tommy Pelphrey's jobs were better than those of Frank Ward (Easter's daddy) or Kennis Holbrook (Gwen's daddy), because Uncle Frank and Uncle Kennis were sporadically employed at smaller, nonunion mines." (DeRosier, 1999)

DeRosier's reference to all adults in the community as "Uncle" and "Aunt" reflects the unusually close-knit relationships.

Of those residents interviewed in Scarlet, Blair and Superior Bottom, only one family expressed personal dissatisfaction with their decision to leave. In that particular case, dissatisfaction was largely due to factors pertaining to their new location. The majority of interviewed residents related concerns about their abilities to find new locations which would be satisfying, and discontent over the loss of close physical and social ties to family and friends. These feelings were expressed by both residents who had left and those who had stayed, indicating the social impacts of displacement could be applied to the families which remain behind in the community as well.

Discourse regarding displacement often reviews the degree to which minority populations are more likely to be displaced. Current federal regulations require that public agencies consider unequal adverse impacts on minority and low income populations when advancing projects, such as new roads. These types of concerns are referred to as 'environmental justice' issues. Executive Order 12898 identifies the following as one of the guiding principles behind identification of environmental justice issues:

> "Agencies should recognize the interrelated cultural, social, occupational, historical, or economic factors that may amplify the natural and physical environmental effects of the proposed agency action. These factors should include the physical sensitivity of the community or population to particular impacts; the effect of any disruption on community structure associated with the proposed action; and the nature and degree of impact on the physical and social structure."

As with other quality of life impacts, the displacement of whole communities, and even the impact upon remaining residents can be considered as a "disruption on community structure." It should be noted that each of the three communities in which displacement has occurred, Scarlet, Blair and Superior Bottom, lie within counties for which the percentage of the population below the poverty level exceeds that of the State of West Virginia for 1990. Therefore, the displacement in these communities should be considered as an environmental justice issue.

3. Community Facilities

In addition to population trends and patterns of displacement, school enrollments in these areas also reflect the decline in population and loss of families in the community. At the county level, school enrollment data indicate that each of the school districts, with the exception of Letcher County, Kentucky where data are not yet available, experienced declined enrollments over the study period. In Mingo County, West Virginia the rate of decline in enrollments from the 1980s to the 1990s jumped from (4) percent to (23) percent. Except in Nicholas County, higher rates of decline were experienced in the post-mining period. Again, this is true for the control school district as well; therefore it is difficult to attribute these declines to a presence of surface mining.

In Letcher County, Kentucky the community of Carcassonne has been impacted by school closures in the district. Anecdotal evidence indicates that the Letcher County school district is currently considering consolidating the whole district from three high schools into one. In 1998, the Letcher County School District closed Campbell's Branch Elementary, one of three elementary schools

serving residents in that portion of the county. The students were consolidated into one of two remaining elementary schools. School District records of the Letcher County Board of Education meetings indicate that parents were concerned about impacts on the quality of education and social community in a now more crowded Letcher Elementary School. School consolidation was reported by residents in Scarlet and Blair in the post-mining period from 1990 to 2000. In addition to the role education plays on quality of life, schools act as physical infrastructure for public meeting space and create a focal point for interactions between families.

Closed School in Blair Area

4. Physical and Economic Community

Both the demographic analysis and the collected residents' interviews indicate physical and economic changes in the study areas and communities. Three issues were raised by residents in each of the communities studied: levels of community employment on surface mining sites; the difficulty and desirability of surface mining jobs; and physical landscape changes. Water quality and availability issues were also raised, but not in every community.

5. Employment and Place of Work

The traditional and complex relationship between the residents of southern West Virginia and the coal industry was echoed in a number of comments. Residents respected the economic benefits the coal industry offers to their communities and region; however, residents often also cited the difficulties in obtaining jobs in the industry. A resident, who ultimately obtained a job through a community connection on a softball team described his trials in getting hired on at the coal company as follows:

"Well, they paid good wages to the ones who worked there. Uh coal is a good

> occupation. It's kinda dangerous, but uh, it pays good wages, got good benefits, if you could get a job. I tried to get a job down Sharples for ah, probably about 12 years, before I even got on down there. One fella told me, he said, 'You the next fella I'm gonna hire.' He lost his job, pretty good while after, he lost his job, and I didn't get the job." (Blair, WV)

Demographic analysis indicates that employment within the mining industry decreased dramatically in McDowell, Nicholas and Wyoming Counties in West Virginia between 1980 and 1990. In addition, overall unemployment rates have increased in all each of the three county subdivision areas in West Virginia as well as the control area. Unemployment doubled in McDowell County and nearly doubled in the North Elkin District in McDowell County between 1980 and 1990. McDowell County had the greatest rate of decline in mining employment between 1980 and 1990. It is important to note, however, that the control study area, District 1, Wyoming County, the area with minimal surface mining activity, also lost mining employment and experienced a marked increase in unemployment.

Many residents felt that economic benefits to the local communities were limited, and only cited a few specific cases of employment generated by surface mining sites benefitting residents in the adjacent community. The results of demographic analysis of income data are similar to those of employment. Each of the county subdivision study areas in West Virginia and the control area had negative growth in median household income between 1979 and 1989. Again, McDowell County and North Elkin District had the greatest decline in median household income, the same areas with significant decreases in coal employment in the during- mining period from 1980 to 1990. Wyoming County as a whole and District One had as great and greater declines respectively in median household income over the same period; therefore, these declines cannot be clearly attributed to loss of employment or income from smaller employment bases associated with surface mining operations as opposed to underground mining operations based on this demographic analysis.

Census data regarding place of work for 1980 and 1990 indicate that in all of the West Virginia county subdivision study areas the percentage of workers who worked in West Virginia and within their county of residence declined. North Elkin County Subdivison experienced the greatest decline from 90.6 percent to 75.4 percent. District One experienced the next highest decline. Place of work data for the 2000 U.S. Census and for Blackey Division in Kentucky for 1980,'90 and'00 are not yet available. The similarity in the trend between the study areas and that of the control area is also demonstrated in the number of workers who work outside their State of residence. District One, Wyoming County experienced the greatest increase, 220 percent, followed by North Elkin, McDowell County with 119.6 percent increase, among resident workers who work outside West Virginia. These travel to work patterns reflect the decline in available employment within the study areas. Mingo County and Nicholas County and their county subdivisions were the exception, showing only small declines in resident workers who work within the county and a decline in the number of resident workers who work outside West Virginia.

While U.S. Census data for 2000 are not yet available for many economic and employment measures, the demographic analysis of pre- (1970 - 1979, represented by the 1980 U.S. Census) and

during (1980 - 1989, represented by the 1990 U.S. Census) mining periods does not present a consistent pattern of improved economic stability or employment growth in the during mining period. Specifically, mining employment declined during the mining period in each of the West Virginia Counties. Several counties showed greater declines than the control county, (Wyoming). Letcher County, Kentucky was the only county evaluated which exhibited an increase in mining employment (2.6 percent) in the "during mining" period.

6. Assistance Income

Another economic and social theme often raised in discourse regarding Appalachia which was echoed by a number of residents, is a tradition of independence and self-reliance. Traditional fluctuations in the coal industry often required families to be adaptable and fill in economic gaps; however, much of the literature regarding this lifestyle indicates that taking government assistance was viewed as a weakness. One account of a father who assiduously refused to be reliant or weak is as follows: "Your in-laws will help you or your parents . If you don't want them to give it to you, you go up there and do a job for them... You work it out so you are not accepting charity" (Yarrow 1990). DeRosier provides another example, "... Daddy immediately found another job doing whatever kind of work he could scare up. One of the things he was proudest of was that he never took a day of 'rocking chair' (unemployment compensation) in his life" (DeRosier, 1999). While Appalachian culture cannot and should not be simplified into stereotypes, the demographic data highlight this point. Given the increasing unemployment, and decreasing income levels, it might be expected to find significant increases in households receiving public assistance; however, between 1979 and 1989, these rates did not increase substantially. These data could also highlight the important role social and family networks play in communities.

7. Physical Shifts

In addition to economic changes, many residents, although not all, reported changes in landscape and physical impacts in communities which they felt were directly related and attributable to the presence of surface mining. Not all of these changes were viewed as negative. "With this mine coming in it hasn't improved anything other than to free up the animals and nature to feel free to come in" (Superior Bottom, WV). Many other residents however felt that changes in surface property ownership changed the accessibility of land for hunting and fishing and that the introduction of dust, rock and overburden has negatively impacted the use of the landscape and overall quality of life. In Werth, Scarlet and Blair residents reported muddy and uninhabitable streams. As one resident explained:

> "...when these coal companies comes through here and strip, they always put a gate up. So a 4-wheeler or nothing gets through there to hunt. I don't like it, and I guess the other guys don't either, you know, who likes to ride 4-wheelers and things. But they always put a gate up… On their roads, where you can't get through. I can understand their part in a certain way, you know… if you got equipment in there, keeping people from stealing.....… 'Course I got, to me, I got to an age where I got rid of my 4-wheeler, and I'm not able to do it. So, but I like to see young guys enjoy their life like I did mine" (Werth, WV).

In some cases, a fear of future and long-term physical impacts has also changed the feelings of stability in the community. A fear of future flooding related to surface mining and associated timbering was mentioned in Werth, Superior Bottom and Blair.

> "...they stripped around to the head of this hollow and we had floods back then. And it would rain, and you'd be sittin on the front porch and you can hear that water coming down the hollow. It would all come down at one time. And we hadn't had any of that, no floods, since they've done this mountaintop. And I don't know what's gonna happen. And it worries me, but a I don't dwell on it a whole lot. But I don't know what's gonna happen." (Blair, WV)

8. Company and Community

Demographic analysis does not measure the relationships and interactions between the coal company and the communities. Reports given by residents both between communities and between interviews, and even within individual interviews were not always consistent regarding the quality and level of public information provided by the coal company and the degree of cooperation and responsiveness exhibited by the companies in regards to complaints. One universal theme that emerged was residents' varying views of different coal companies. The resident's views were shaped by a number of factors including the availability of public information, the manner in which complaints were handled, and the perceived quality of the surface mining site's operations. These factors shaped responses to questions regarding specific surface mining sites and companies adjacent to the communities; however, responses regarding surface mining as a practice or coal companies in the abstract often seemed to be shaped by larger personal and perhaps political views.

In no instance did residents report being aware of public information being made available prior to surface mining aside from legally required permit advertisements in the local papers. With the exception of Werth, residents reported being aware of planned surface mining operations and in some cases reading publicly advertised permit notifications. In Werth, several residents did not report seeing advertisements for strip mining operations which were reportedly active prior to the 1970s. It was agreed by all residents that this type of public notification was useful, especially to those residents who's personal property might be adjacent to the permit area.

The interface provided by individual company representatives or representatives of public agencies between the communities and the coal mining industry was highlighted in every community.

> "You're trying to provide jobs for people, lot of the jobs, I said you also trying to earn a living. And that God has blessed us to be past that age where we are retired and can live, you know. And I said, but if you need this to provide jobs, I won't stand in your way...He said yes, we'll hire anybody. And so based on that, and I told him I will sell." (Superior Bottom, WV)

One resident described the advantage of having a personal connection to someone within the company:

> "It was to me because see I could tell, I could talk to him. They run up around the road here, and drilled a test well. They drilled several of them, water wells. They used the water to clean off the road, too. But my spring out there went dry. I thought they had sunk the spring. See they drilled a test drill on above it there. I talked to him about it and he brought a man in here on a backhoe and they dug that out. And they hadn't been the cause. The water in the line that went up there to where the spring was, was stopped up. But they put a new line in and cemented it in and everything and they wouldn't take any money for it. They paid for it. Now that wasn't Tassa that was Hobet. Tassa wouldn't even talk to me. When they stopped the sewer system up, I went down there to see them and they didn't want to even talk to me." (Werth, WV)

With one exception, all the residents interviewed felt that coal companies did not make information regarding on-going mining activities available. Several residents in each community referred to family members and friends with jobs or connections to the companies for information.

> "Just my son knew everything what was going on. The company never approached me for nothing" (Blair, WV).

9. Community Future

While most resident did not have very optimistic views of the futures of their communities, this was not always attributed to the presence of surface mining adjacent to the community. In Werth, WV, it was noted that debris in the stream and subsequent flooding of the bottomland left the area inhospitable to farming, but most residents also felt that there was no more future for the small, independent farmers of the type which had once been in Werth. One resident in Superior Bottom, WV felt that the community was going through a necessary phase of decline as part of an overall cycle of regeneration which any community might face. In Scarlet, WV and in Blair, WV however, residents did not express anything positive regarding the near future because of the presence of surface mining and the impacts of the displaced community, such as abandoned homes and loss of community network.

Another important theme which was recurring among the community interviews was the belief and knowledge that the coal mining industry had done a lot for the West Virginia economy and specifically for some of the residents. Nearly every single family that was interviewed had either currently or in the past, a family member working in the coal mining industry. All of those interviewed, who had made their personal living in the coal industry, had worked either underground or at a prep plant. The role that the coal industry has played and will continue to play in the economies of the region is well recognized.

> "I raised three children on the miner's income" (Blair, WV).

The future role of the coal industry is not only in on-going extraction as an active employer, but in on-going benefits for retired miners. Residents in Werth and in Blair reiterated this point. As stated previously, the portion of the population ages 65 and older is increasingly representing a larger

portion of the population in each of the study areas.

> "Nearly every resident expressed the belief that coal mining is necessary and desirable for the economy, but that surface mining should be done more cleanly."

> "Like I told you on the phone, I'm not against mining whatsoever, it's just that those of us that feel the effects of the damages and things like that. You know, they need to take care of us. Do something to prevent further damage, to keep us safe, you know, stuff like that. But, on the good part, for the men that need a job to support their family, it is great." (Scarlet, WV)

> "They helped me, of course I raised my family through coal mining, I got a retirement and whether I… I don't know how long that will last, but anyway I got one. So overall I think the strip mining could do a better job reclaiming the surface, that would put people that likes to hunt, that gives them more places to enjoy..." (Blair, WV)

B. INCONSISTENCIES

This section highlights points raised by residents that were not common themes. Between each community and within a given community, several points were raised that were not necessarily echoed by others, but which bear mentioning and consideration. Further investigation would be necessary to determine if these experiences were isolated.

The majority of the census data analysis supports and parallels the reports given by the residents. However, the control study area, Wyoming County and District One, showed very similar demographic patterns as that of the study areas. While the ties between the demographic patterns of the study areas and the shifts in the coal mining industry are readily apparent, the similarity between the control area and the study areas makes it difficult to determine the degree to which demographic shifts are attributable to the presence of large-scale surface mining.

1. Social Community

Shifts in population within the counties and within the county subdivision areas support the reports given by residents in the communities. The reactions and feelings expressed by the residents regarding separation from traditionally family owned land varied somewhat. Overall, residents in Scarlet and Blair expressed the strongest ties to the land. In these communities, most of the interviewed residents represented at least the second generation, and even the third to have lived in the community. Often in Scarlet, references were made to the 'home place' or 'homestead' that was the first settlement of the family in that location. In Werth and Superior Bottom, ties to the land did not seem to extend to a third generation. Many of the residents had moved there as children and subsequently raised their families in Werth, but few believed that their children would return to the area to settle. While this difference in settlement patterns appears to have no correlation to the presence of surface mining, it does seem to correlate to the discussions of the future of each community. In Werth and Superior Bottom, residents were more hopeful of a regeneration and repopulation of the community at some point in the future. In contrast, in Scarlet and Blair, residents expressed strong views that there may be no future for the community. Further social analysis could examine the link between strong family ties and the strong negative reactions to the disruption of these ties.

2. Displacement

As previously stated, the feelings expressed by residents in communities that reportedly experienced displacement, Scarlet, Blair and Superior Bottom are not entirely consistent with the types of social and psychological impacts often discussed with displacement. The majority of residents reported feelings of loss for community and social networks. However, in some cases feelings of great resentment were expressed toward other community members and the coal companies.

With regard to environmental justice, two communities in which property ownership patterns and resident interviews were collected have substantial minority populations based on demographic data and/or resident accounts. These communities are Kyle in North Elkin District, McDowell County and Superior Bottom WV. Property ownership data for these two communities show that only one community has experienced displacement, Superior Bottom. Community interviews have not yet been collected in Kyle, WV; however, as noted in Section IV.A.6., Race, North Elkin District, represents a high concentration of African American residents. Therefore, based upon available data, there is no indication that minority populations in the study area jurisdictions have suffered unequal adverse impacts compared to other populations.

3. Community Facilities

Experiences of school closures and consolidation were not reported in every community. In Werth and in Superior Bottom school consolidation was not reported in relationship to the time frame of surface mining in the community. In addition, some residents noted that the coal mining companies and the industry had helped to support local facilities, such as parks and hospitals. In fact, until the time that the coal company required land for its own uses, land adjacent to the railroad track serving the underground mine in Scarlet was reported the site of an informal ball field. These reports are

in contrast to the opinion expressed by the majority of residents interviewed who felt that the presence of surface mining adjacent to their communities provided no benefits in terms of community facilities.

C. PHYSICAL AND ECONOMIC COMMUNITY

1. Employment and Place of Work

As stated in the section on physical and economic community, the results of the demographic analysis do not show a clear correlation between either employment rate or income levels and the presence of large-scale surface mining. When asked to name economic benefits to the communities from the presence of adjacent surface mining, nearly all residents felt there were little or no benefits. The few benefits that were named include retirement benefits and regional economic stability. However, the negative responses belie the evidence that these same residents reported. In each community at least one interviewed person mentioned knowing someone having a job at the adjacent surface mining operation. It is difficult to assess the extent communities benefit economically from adjacent surface mining operations.

With regard to place of work, as previously noted two of the study area counties and their county subdivision areas showed little decline in the percentage of resident workers who work in their area or State of residence, Mingo and Nicholas Counties. This pattern of retention is in contrast to rising unemployment rates on par with those of the other study area jurisdictions. While Mingo County lost a smaller percentage of its mining employment between 1980 and 1990, Wyoming County lost over half of its mining employment in the same period. One explanation of on-going economic stability offered by a resident of Werth in Nicholas County,WV was the increased development of service industry employment associated with the outdoor recreation industry in the region.

2. Assistance Income

Mingo County and Hardee District and Hamilton District in Nicholas County were also inconsistent with the other study areas with regard to patterns of households receiving Social Security income. In Mingo County between 1980 and 1990 there was no change. In Hardee and Hamilton Districts there was a decline; in fact in, Hardee District there was a 10 percent decline in the percent of household receiving Social Security income. All of other study area jurisdictions had increases in these rates. The increases in percentage of persons in the mature and senior age groups and in the percentages of the population receiving public assistance income in Mingo County and Hardee and Hamilton Districts were parallel to those of all the other study area jurisdictions; therefore, the inconsistencies in their rates of households receiving Social Security income does not appear to be attributable to population demographics.

3. Physical Shifts

The majority of reported physical changes in the communities studied were similar. However, in Scarlet, WV, Werth, WV and Blair, WV residents differed in their views of surface mining impacts to well water and the coal company's responsiveness to any such impacts. In addition, between

communities residents did not consistently report the presence of fly-rock sometimes associated with blasting techniques. For those that did report these physical impacts the effects were varied. In Werth, well water problems were addressed by the coal company to the satisfaction of the resident. In Scarlet and Blair however, residents who reported well water problems felt that their complaints were ignored and wrongfully dismissed. In Scarlet, a public water system is currently being installed, but reports were inconsistent regarding the involvement of any coal companies in implementing this system. In addition, residents faced hook-up fees, reportedly of $500, along with future water bills. Residents were quick to point out that this resource was once freely available on their property.

4. Company and Community

It is not possible to provide a uniform characterization of the relationship between the coal companies and the study communities. Residents' accounts depict these relationships as varying from very good to very bad. Three different accounts in three different communities highlight very positive experiences in dealing with the coal company regarding relocation and community benefits, but just as many residents reported poor and bad experiences regarding the same issues.

As with the experiences of residents regarding pre-blast surveys, residents reported inconsistent satisfaction from both coal mining companies and public agencies in response to complaints of impacts. Generally, many residents felt that complaints were left unaddressed or disregarded. In Werth and in Scarlet residents indicated that while complaints were acknowledged, corrective actions were never carried out. In Blair and Scarlet residents reported filing and bringing complaints to the awareness of public agencies, and the complaints were believed to be wrongfully ignored and even mocked. However, some of these same residents reported having specific complaints addressed completely to their satisfaction. Additionally, in Scarlet and Blair residents reported attending public meetings to address community complaints or issues; however, not everyone recalled such meetings and not all communities reportedly had such meetings.

Conflicting reports were also given regarding conditions associated with the purchase of homes by the coal company. Some residents were required to relocate outside of the area in which coal companies held interests while others were relocated in the same communities.

> "....it says that you cannot, couldn't move within so many miles but you couldn't move back up that holler, Scarlet, at all. But then this area along, the four lane, you couldn't move there either they said" (Scarlet, WV).

Similar accounts were given in Blair as well. Residents reported being told they may have the option to buy back their land at a future date, but other residents were told this was not an option.

> "...they said plainly we could not buy it back. Then we see that other people had the right to buy their's back" (Scarlet, WV).

Some of these discrepancies occurred within the same communities, and some are differences in the

experiences of different communities with different companies or operations.

Each of these communities is adjacent to large-scale surface mining operations; however, large-scale patterns of purchasing of private property by extraction or land holding companies were reported, to date, and is evident in property records of only three communities. As discussed above, no apparent correlation can be drawn between the racial make-up of a community and decisions by coal companies to undertake large-scale purchasing of homes and/or properties.

5. Community Future

Some residents felt that additional public information would have better equipped the residents to understand and perhaps respond to the surface mining occurring around their community.

> "...I talked to several of the neighbors around up around Island Creek up to Tioga and in through there. And they said if they would have knew what was going on they could have probably stopped part of that. But we didn't know it until it was too late. We had no idea what they was doing or what it would do - the damage or anything else. I had never seen a strip mine." (Werth, WV)

Residents also indicated more consistent dealings between coal companies and families within the communities could have eased the social and psychological impacts of displacement. Other residents in Werth for example felt that the mining companies took all necessary steps to inform the public of mining activities and provided benefits which off-set any impacts.

As previously stated, opinions regarding the future of these communities varied and are possibly correlated to the level of personal values on land as part of a family heritage. The differences of opinion regarding communities' futures were in some instances more complex than simply stating the community either did or did not have a positive future. For example, in Werth residents felt that the aging population and lack of significant local employment, such as coal mines or a saw mill gave people little incentive to move into the area. These same residents also felt that there might be a future settlement of families with jobs elsewhere and they did not feel that the past presence of surface mining had impacted the future value of land for anything other than agricultural use. In contrast, in Werth, residents did not feel that it was likely nor were there employment opportunities which would retain or draw back their own children.

IX. CONCLUSIONS

The purpose of this study is to evaluate what, if any, demographic changes can be observed in communities located adjacent to mountaintop surface mining operations. Demographic data and personal accounts were collected. The demographic evaluations presented for the selected case study areas were based on three decades of census data (i.e., the 1980, 1990, and 2000 decennial censuses) in order to assess the demographic trends that have occurred over time: "prior to mountaintop surface mining operations into the case study community (i.e., 1980)," "during mountaintop surface mining (i.e., 1990)," and "after mountaintop surface mining (i.e., 2000)," respectively. Case study

areas were selected based on timing of mining operations so that a comparison of pre, during and post mining conditions could be performed.

Hamilton District in Nicholas county was the only district that had an employment trend that would be expected; an increase in the during mining condition and a decrease in the after mining condition. Employment increased during mining in two of the four case study magisterial districts and decreased after mining in two of the four case study magisterial districts, but not the same two. The control district did not experience an increase in employment in the during mining condition but experienced a decrease in employment in the after mining condition. The number of persons working in their resident county increased in Hamilton district for the during mining condition, this was the only district where this occurred. Unemployment did not decrease in any of the case study areas for the during mining condition.

Per capita income increased during mining in only one of the case study magisterial districts. Per capita income decreased after mining in one of the case study magisterial districts and in the control district. This income increase during mining and decrease after mining was not in the same district. Real growth in median household income decreased in double digits in all case study areas as compared to a four and a half increase nationally.

For most of the case study areas, the number of persons receiving public assistance did not decrease in the during mining condition. Public assistance decreased in one of the case study districts and in the control district in the during mining condition. The number of persons living in poverty did not decrease in the during mining condition in any of the case study districts or the control.

Educational attainment, persons receiving high school or college degrees, increased in the during mining and after mining conditions for all case study areas and the control area with one exception. High school diploma attainment did not increase in the Blackey Division in the during mining condition although college degree attainment increased.

The North Elkin District is the only case study area with a notable black/African American population. It does not appear that the economic conditions for residents of this district improved in the during mining condition. Large percentage point increases in poverty levels were experienced in McDowell County and the North Elkin district. Employment did not increase nor did income increase in this district during mining. One of the topics evaluated in this study is whether there are indications of greater relocations or displacement in non-white racial areas. A sample of property ownership data from the North Elkin District did not display a pattern of large-scale purchase of properties by extraction or land holding companies. However, a sample of property ownership data from Superior Bottom another racially integrated community shows a 52 percent shift from private ownership to land holding company ownership.

Population decreased in all of the case study areas during mining and after mining. The number of students enrolled in public school districts decreased in all of the case study areas including the control area. All study areas experienced a decrease in their young adult populations. The senior age group is comprising an increasing percentage of the total population within each of the study areas.

Several themes emerged from personal accounts of interviewed residents when describing their

experiences living in a community adjacent to mountaintop surface mining. Demographic data support many of these themes such as loss of population and aging populations. The experiences shared by residents include loss of community population and community structure, struggles in obtaining available economic benefits, occurrences of similar physical changes and feelings of ineffectiveness in preventing or managing these effects. Additional common experiences shared among the study communities related to the purchase of homes and property by extraction or land holding companies and the resulting impacts of displacement.

Tables

Attachment 1. Case Study Photographs

Attachment 2. Community Narratives (Interview Transcripts)